

E.CA Economics

Geographic Market Definition – Analysis & Visualization

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Market Definition: Classic Methods and Issues

Dr. Hans W. Friederiszick
Director E.CA and Research Fellow ESMT Berlin

Local market analysis: relevant, irrelevant, superrelevant?

- Where do we come from:
 - Wrong principles: *...from the demand side, the Italian market (for sugar) seemed to be a market open to imports because prices in Italy were higher than in neighbouring countries...*
1992, p.359 Eridania/ ISI case cited in the XXIst Report from the Commission, cited from Damien Neven
 - and simplifications, e.g. administrative districts or plant cycles
- via (proper) survey approaches:

If the price of product x were permanently increased by 5 to 10% only within the home country, to what extent within a year would buyers be expected to shift their demand from product x produced at home to that produced abroad?
- To catchment area/ radii analysis
 - Customer centred cycles vs. plant centred cycles
 - Driving distances vs. “as the crow flies”
 - Heatmaps vs. tables
- Partially driven by technology
 - Improved software for Geographical Information Systems (GIS)
 - Better data, with even open source data (OpenStreetMap) achieving usable quality

...both on analysts' and companies' side

Agenda

Introduction

Customer centred analysis

Chain effects

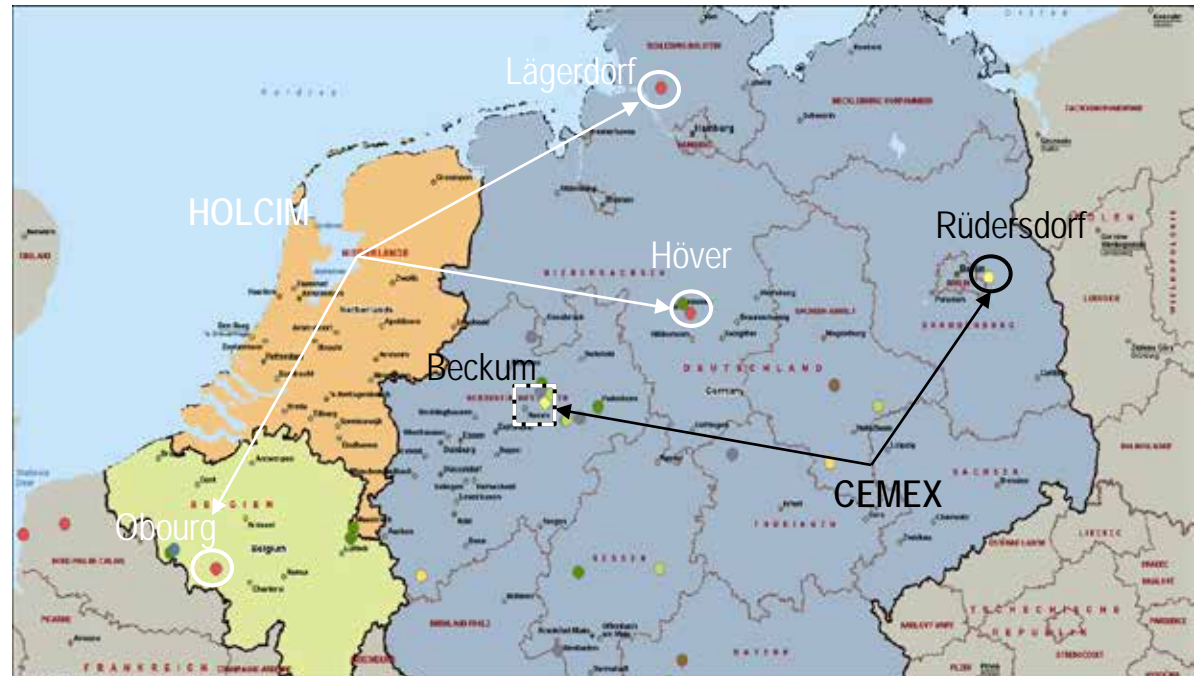
Conclusion

DISCLAIMER

- *E.CA Economics supports some of the parties to cases discussed in this presentation*
- *Facts or opinions given here do not necessarily represent the parties or E.CA position in these cases*
- *This presentation is based on the publicly available version of the EC decision text and press releases*
- *Figures illustrate the method only; numbers have been changed/ modified though*

Transport cost intensive industries - the takeover of Cemex West by Holcim

- **Cemex Deutschland:** One integrated plant in West-Germany (Beckum) and one in the east (Rüdersdorf)
- **Holcim:** Two integrated plants in Germany (Lägerdorf and Höver). One integrated plant in Belgium (Obourg)
- **Business Rationale**
 - Synergies: Beckum good addition to the plant network of Holcim in Northern Germany and Belgium
 - Significant overcapacity and low profitability require consolidation



Transport cost intensive industries

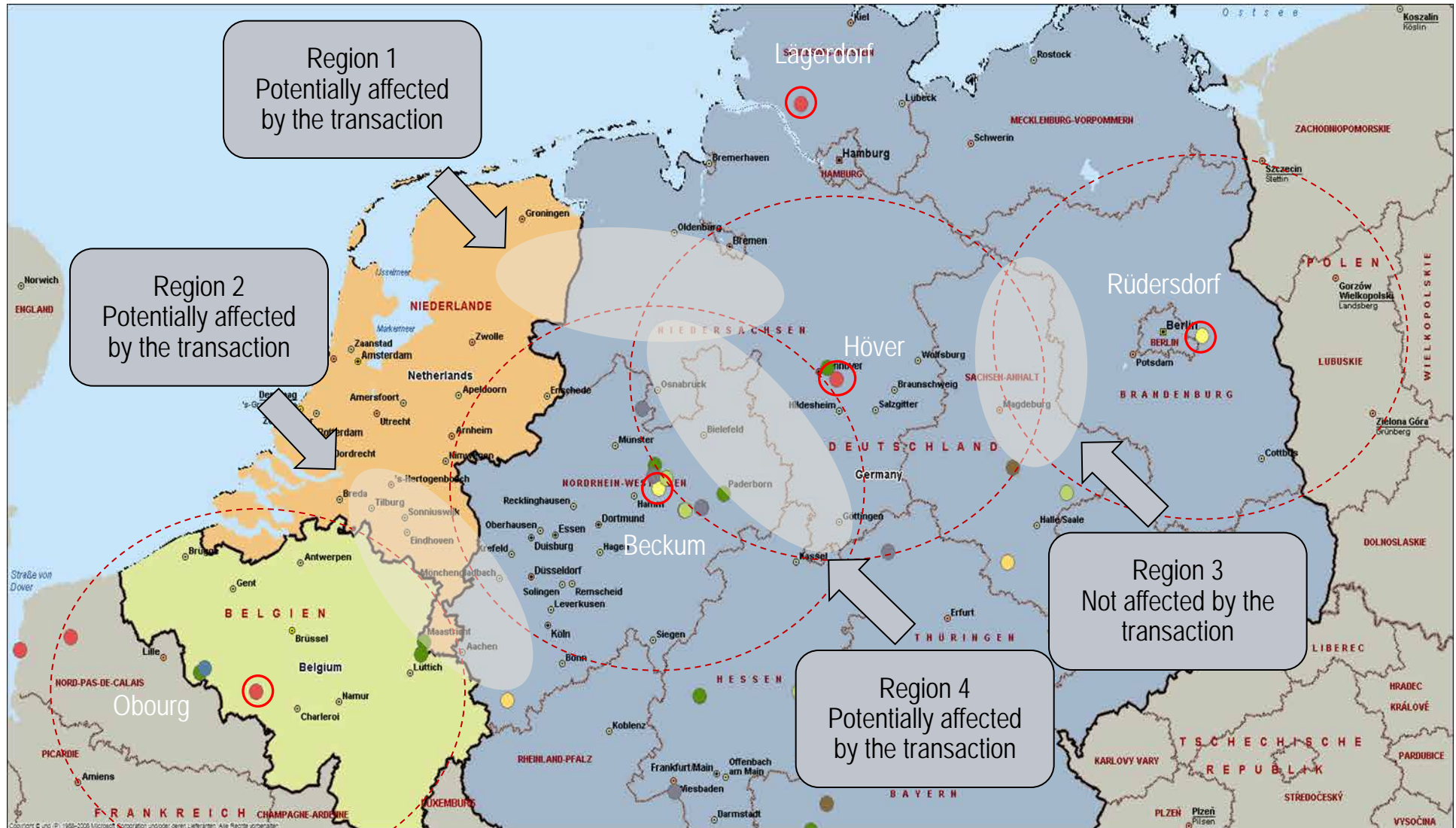
Potential unilateral effects



Note: only integrated cement plants are shown. Red-dashed circles show the approximated delivery radii of 150 km-250 km.

Transport cost intensive industries

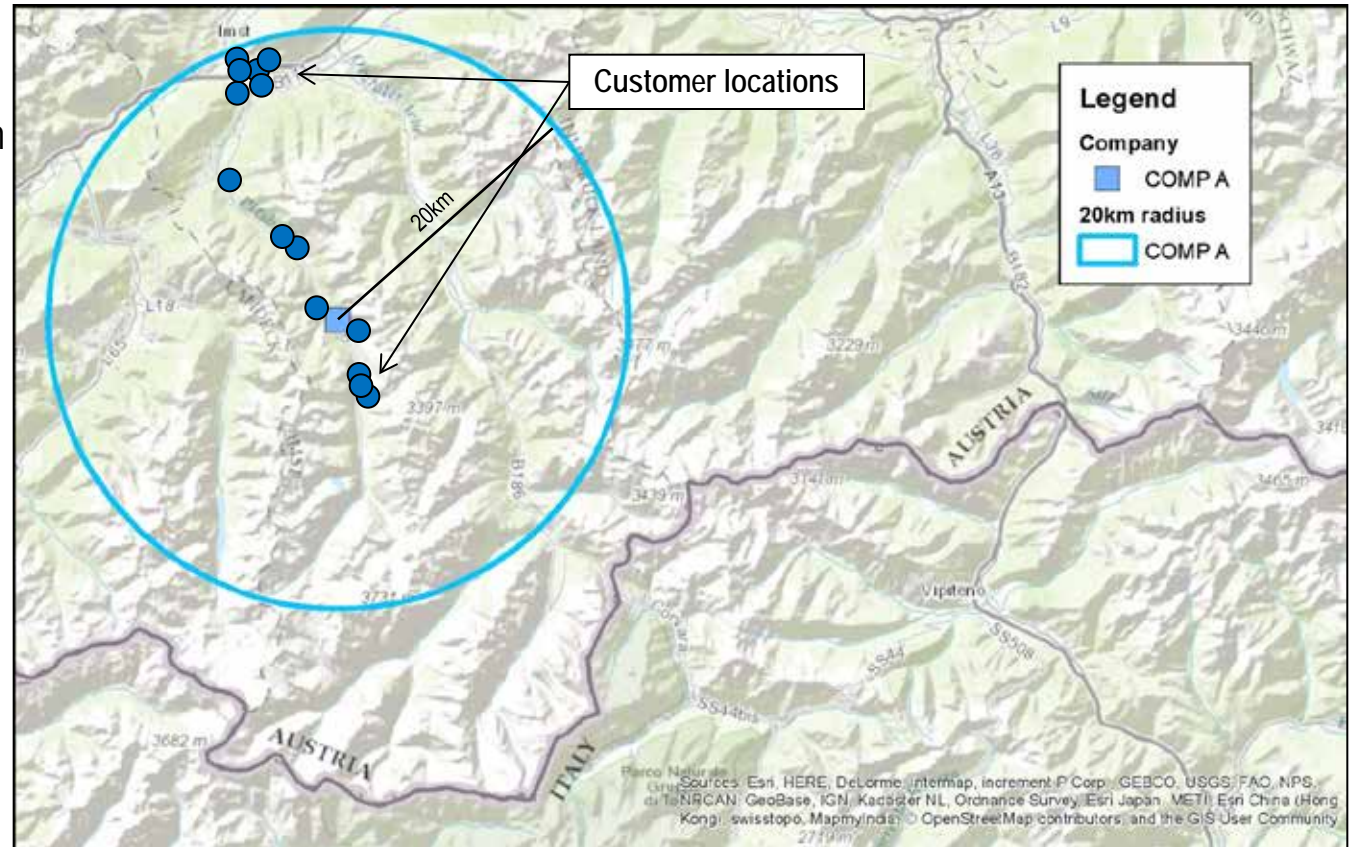
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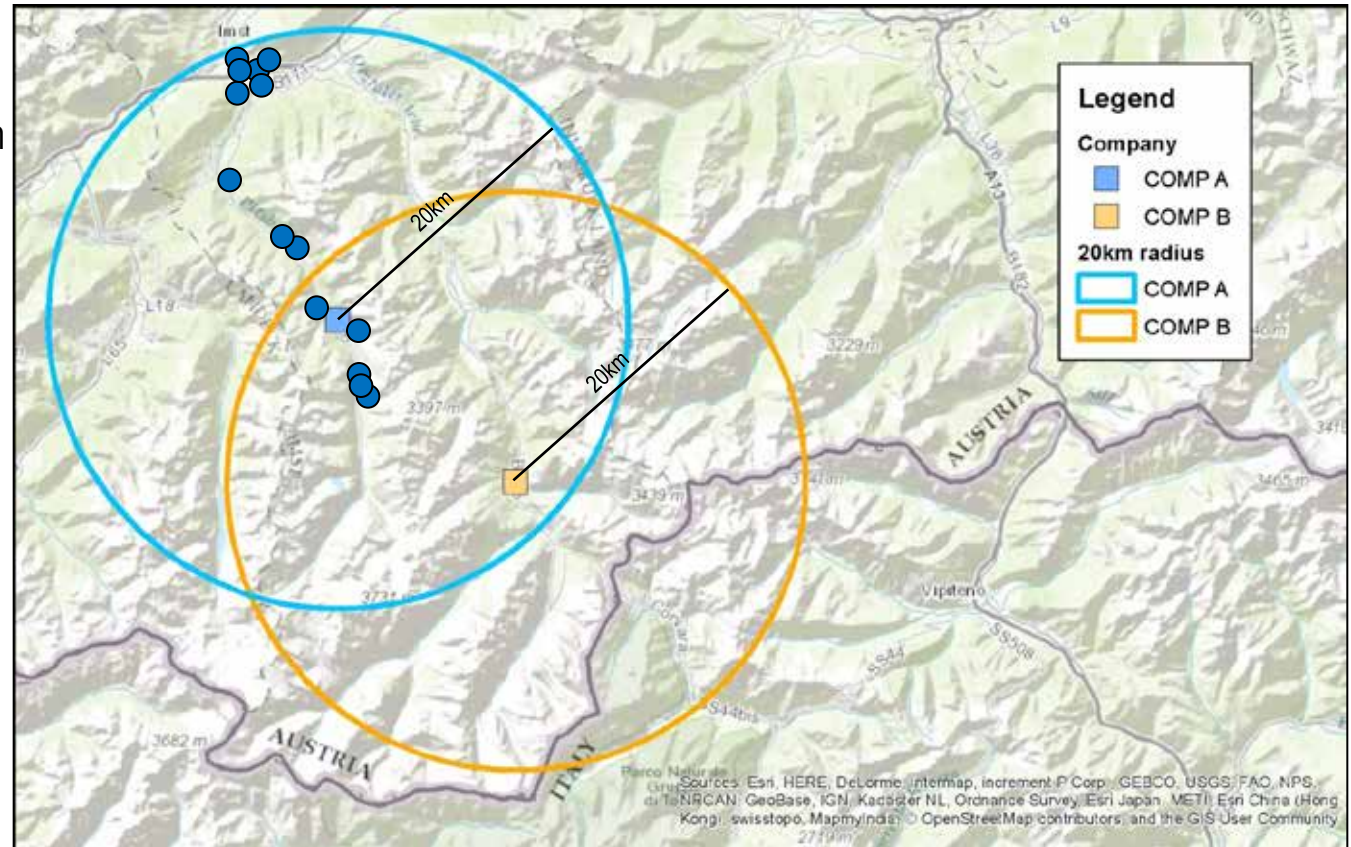
Detour: Driving distances vs. “as the crow flies”, I

- Hypothetical plant/ company located in St. Leonhard (Austria)
- Geographic market definition often based on an assessment of the actual sales of the plant (e.g. 90% of total volume sold within x km)
- Assumption that is then often used: relevant market is the circular catchment area around the production site



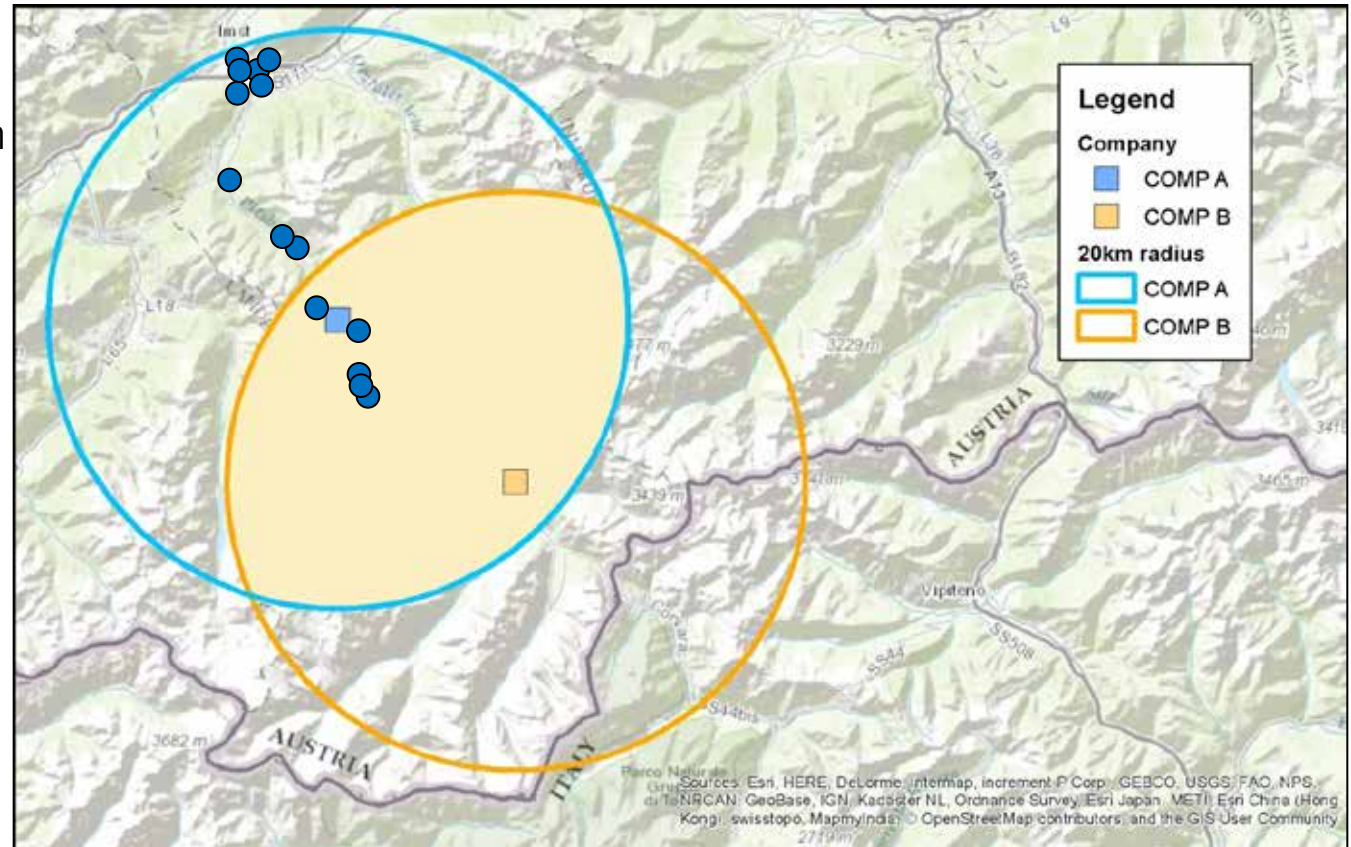
Detour: Driving distances vs. “as the crow flies”, II

- Hypothetical plant/company located in St. Leonhard (Austria)
- Geographic market definition often based on an assessment of the actual sales of the plant (e.g. 90% of total volume sold within x km)
- Assumption that is then often used: relevant market is the circular catchment area around the production site
- Same rule applied for competitors (COMP B)



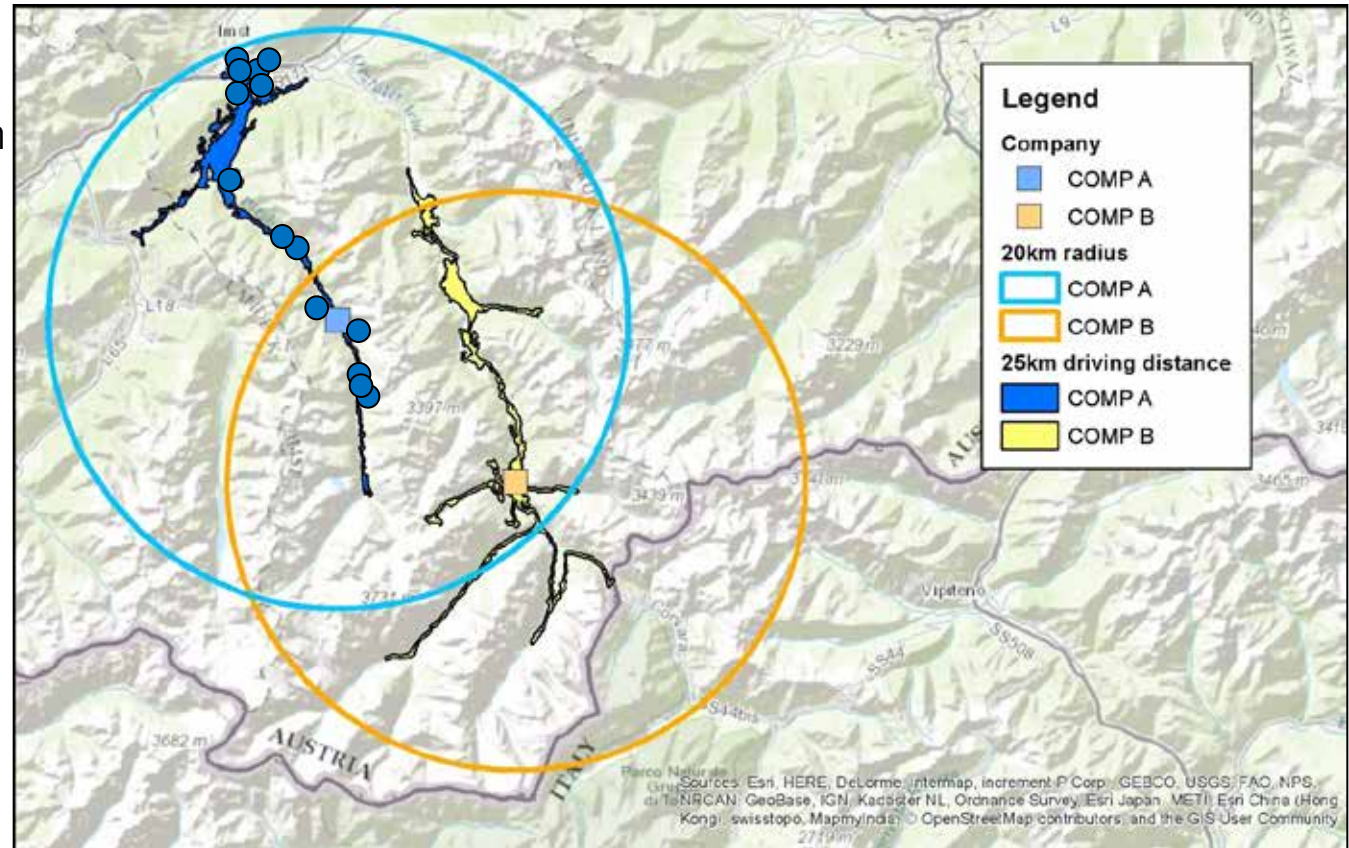
Detour: Driving distances vs. “as the crow flies”, III

- Hypothetical plant/company located in St. Leonhard (Austria)
- Geographic market definition often based on an assessment of the actual sales of the plant (e.g. 90% of total volume sold within x km)
- Assumption that is then often used: relevant market is the circular catchment area around the production site
- Same rule applied for competitors (COMP B)
- Overlapping catchment areas



Detour: Driving distances vs. “as the crow flies”, IV

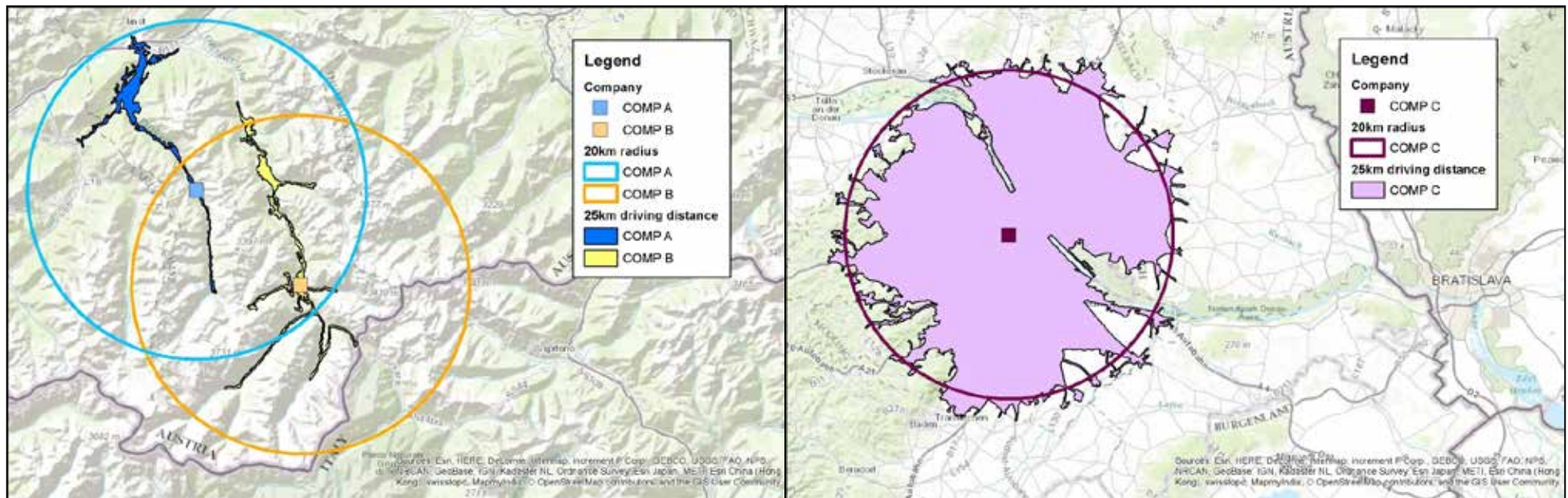
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- Assumption that is then often used: relevant market is the circular catchment area around the production site
- Same rule applied for competitors (COMP B)
- Overlapping catchment areas
- Alternative: driving distance based catchment areas (here 25km road distance)
- Here: no overlap in activities based on driving distance catchment areas



Detour: Driving distances vs. “as the crow flies”, V

Sometime simple approaches work!

- Particularly relevant if e.g. mountains/sea/forest areas within the geographic market
- Example: 25km driving distance shapes in Austrian mountain region vs. urban region around Vienna

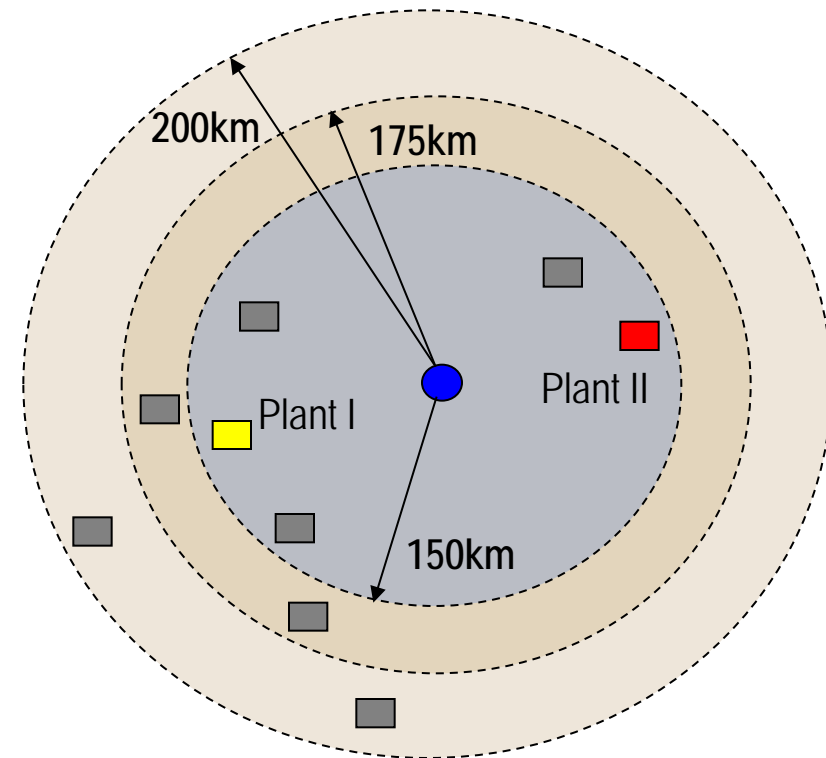


Transport cost intensive industries

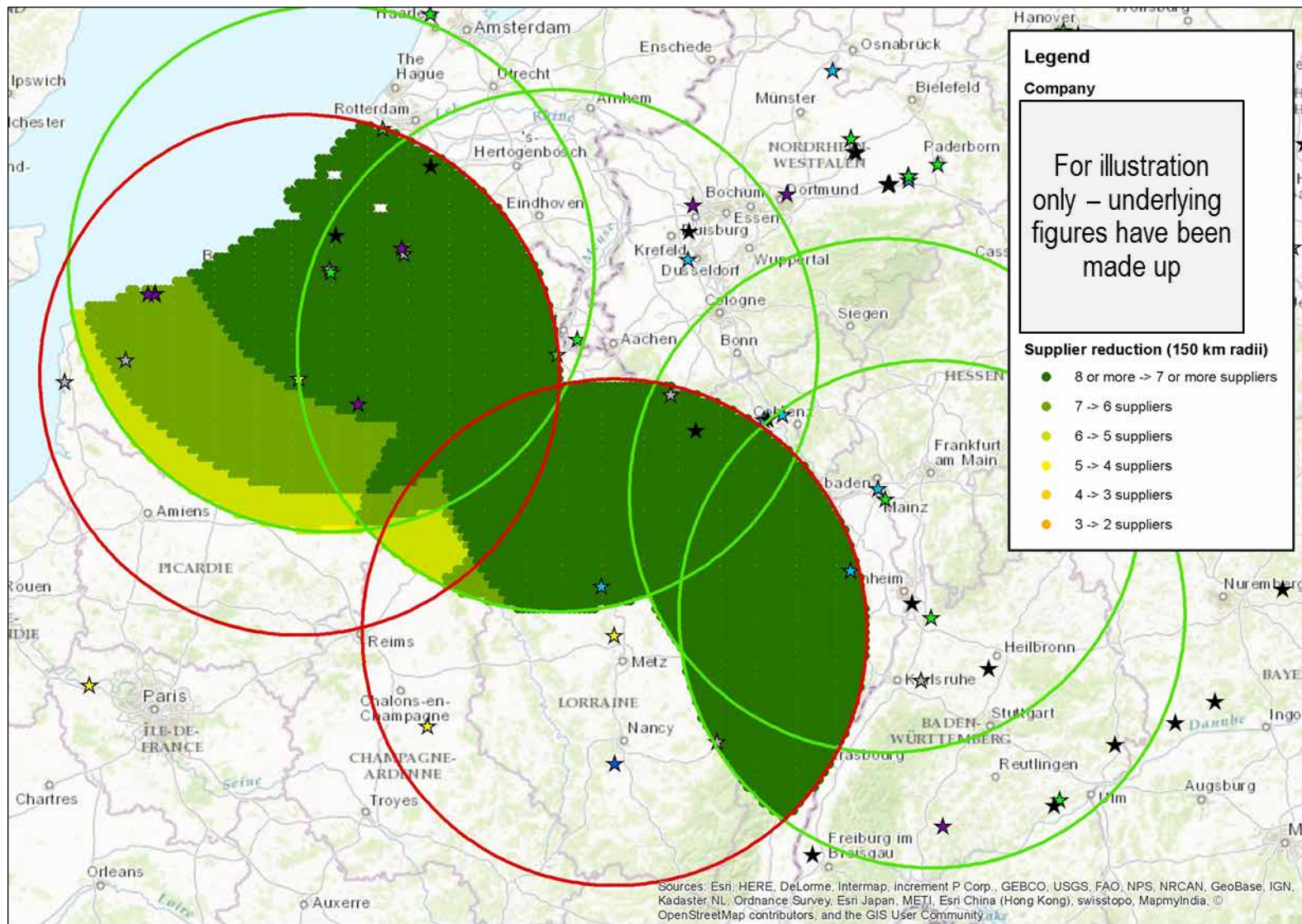
Potential unilateral effects

- The level of the **sales volumes in overlapping regions** affects the potential for unilateral price effects
 - Strong regional complementarity speaks against unilateral price effects
- Remaining supplier analysis:** Will the transaction affect the supply alternatives for the customers in overlapping regions?

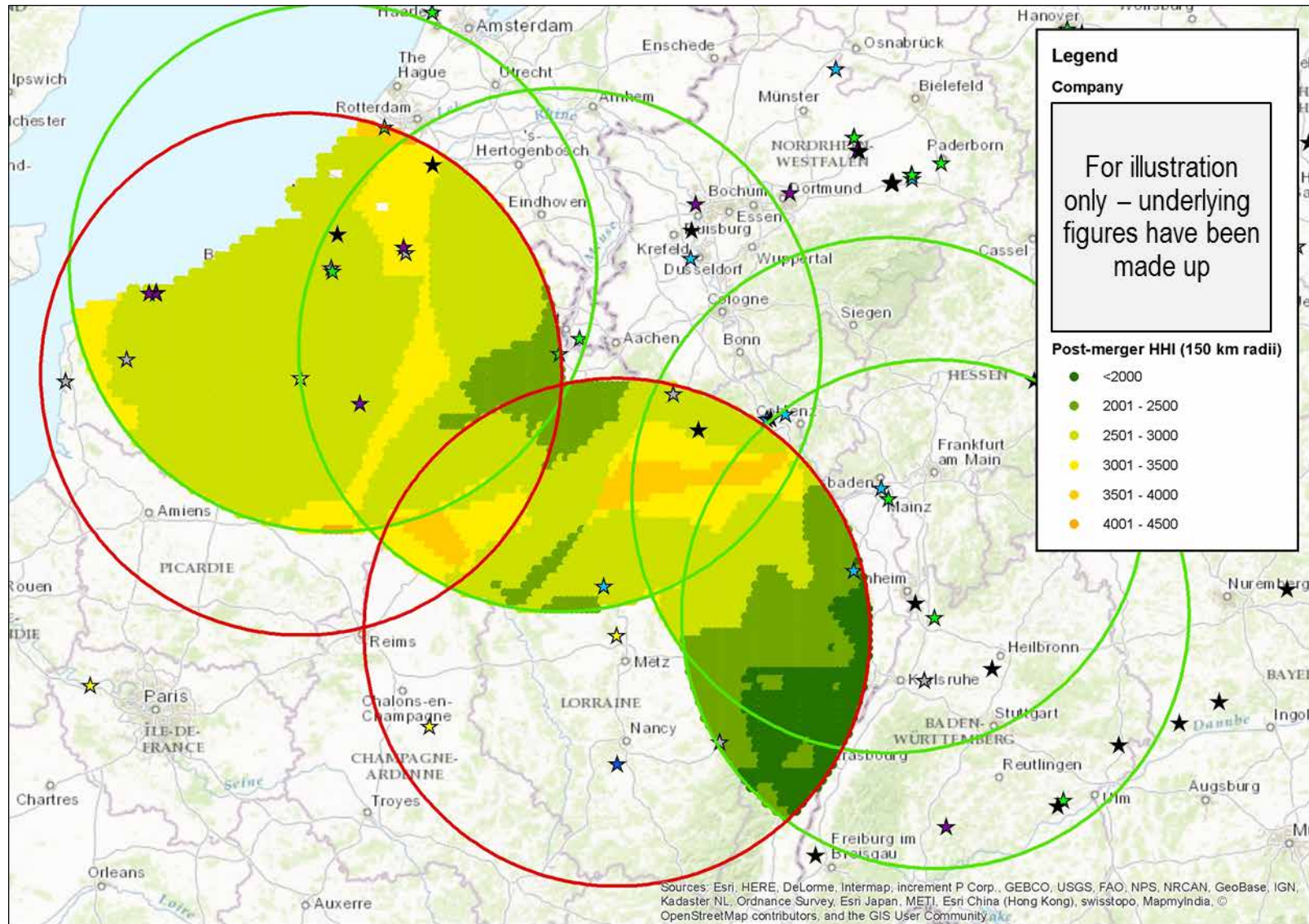
	Current prices	After 5% price increase	After 10% price increase
Transport distance (km)	150	175	200
Number of independent suppliers	4	6	8
Free independent capacity (kt)	1.500	3.000	4.500



Remaining supplier analysis



HHI Heatmap



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Ripple effects revisited

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EDEKA/ Kaiser's Tengelmann

Background

EDEKA/ Kaiser's Tengelmann

- Merger in the market for food retailing (supermarkets) in Germany
- E.CA involved to support EDEKA during the proceedings vis-à-vis the German FCO
 - Geographic market definition
 - Product market definition
 - Competitive effects

Focus of the following slides: Geographic market definition

EDEKA/Kaiser's Tengelmann *Geographic market definition*

FCO's original market definition strictly followed administrative borders ...

- No consideration of catchment areas
 - No consideration of chains of substitution
- ... ignoring economic rationale behind market definition

E.CA submitted an analysis of chains of substitution

- Motivation SSNIP-Test ("Can a hypothetical monopolist profitably increase prices?")
- Expansion of candidate market as long as overlap of neighbouring catchment areas prevents a price increase

Given the significant overlaps of the stores' catchment areas, results point at city-wide markets for Berlin and Munich

Illustration: Berlin



EDEKA/Kaiser's Tengelmann

Chains of substitution – the FCO's critique

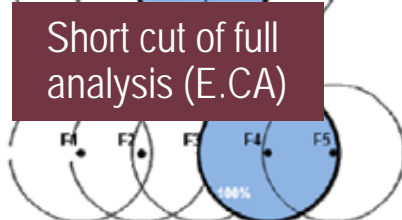
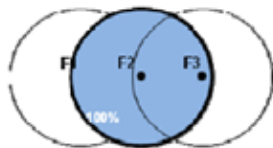
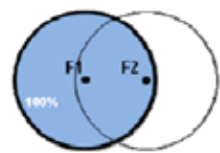
FCO: Dismissed chain of substitution analysis submitted by E.CA...

...arguing:

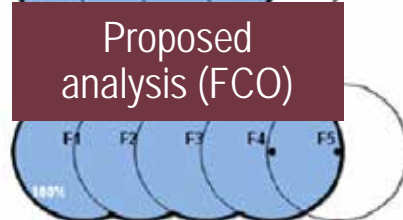
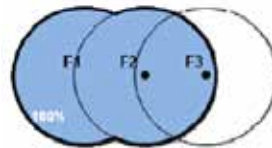
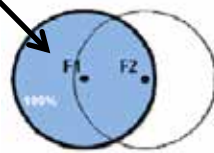
- Candidate market should include all previously linked areas
- And only constraints from one bordering area need to be considered at a time...

... but this argument is partial:

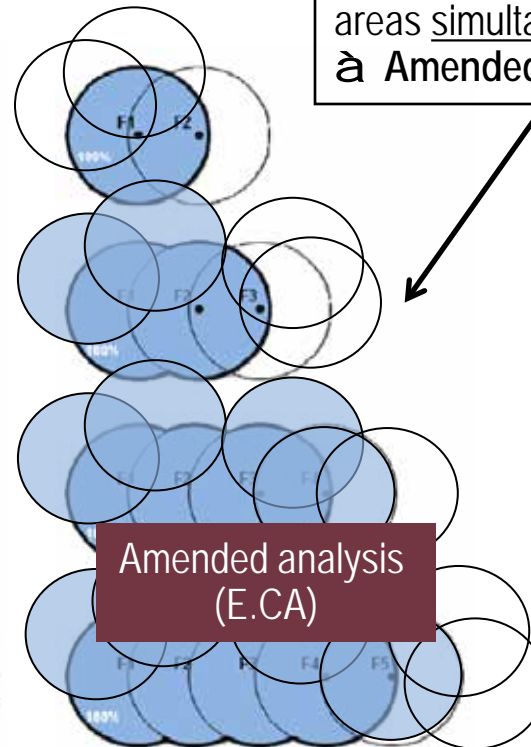
- If candidate market includes all previously linked areas ...
 - ... one must consider the constraints from all bordering areas simultaneously
- à Amended analysis by E.CA



Short cut of full analysis (E.CA)



Proposed analysis (FCO)



Amended analysis (E.CA)

EDEKA/Kaiser's Tengelmann

Illustration Munich: example of amended analysis

Analysis points to geographic market comprising the whole city of Munich ...

Step 1



First candidate market

Step 2



Successive expansion of
candidate market ...

Step 3



... if actual overlap exceeds
critical threshold and
... taking into account constraints
of all bordering markets

EDEKA/Kaiser's Tengelmann

Illustration Munich: example of amended analysis (cont'd.)

Analysis points to geographic market comprising the whole city of Munich ...

Step 1

Step 2

Step 3

Step 3: Will candidate market be expanded?

- Critical threshold: 37%
- Actual overlap: **-?-**

Challenge at that time: Catchment areas have been plotted 'manually':
Without an algorithm of the mapping software, the exact overlap could not be calculated mathematically ...
... and had to be estimated by eyeballing.

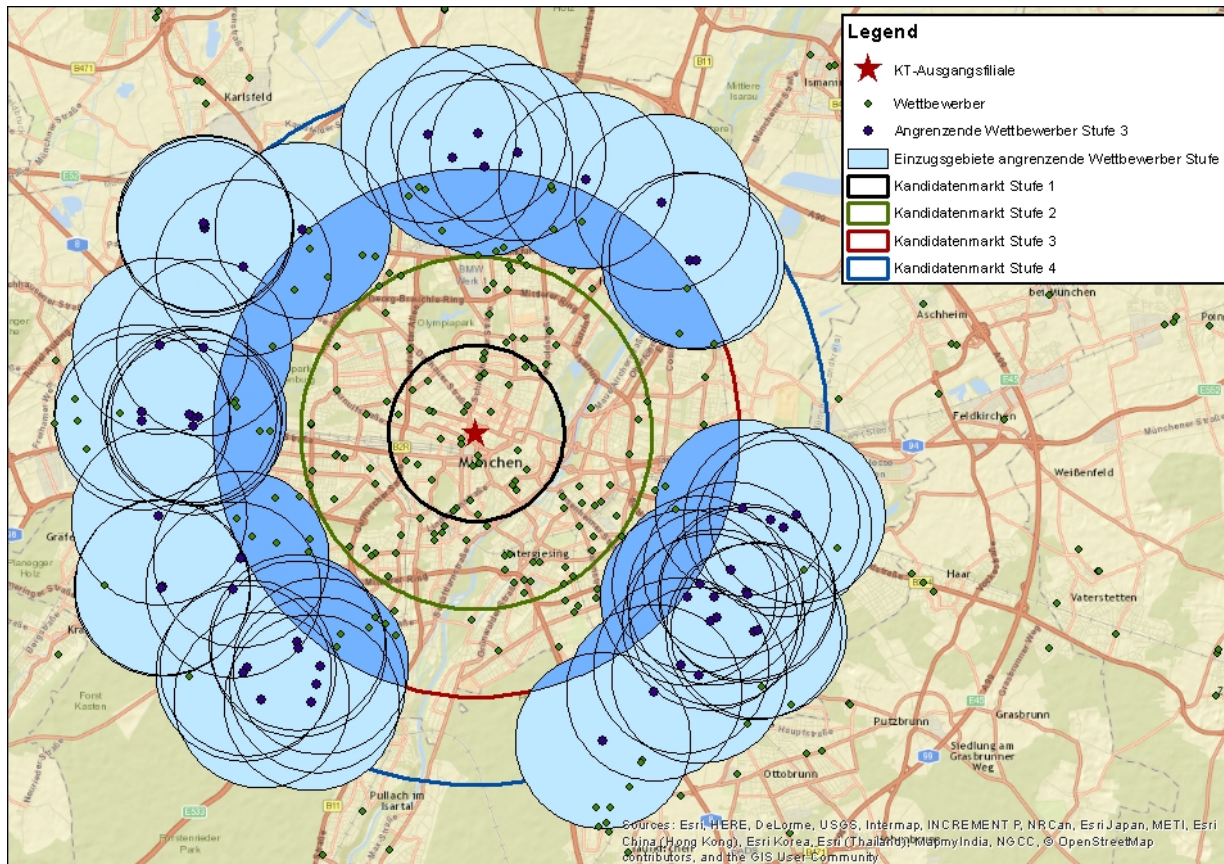
... but: weakness of the analysis due to 'eyeballing exercise'

EDEKA/Kaiser's Tengelmann

Illustration Munich: example of amended analysis (cont'd.)

Using geoprocessing tools like ArcMap allow calculation of overlapping area (dark blue)

Step 3 (new)



Step 3 (old)

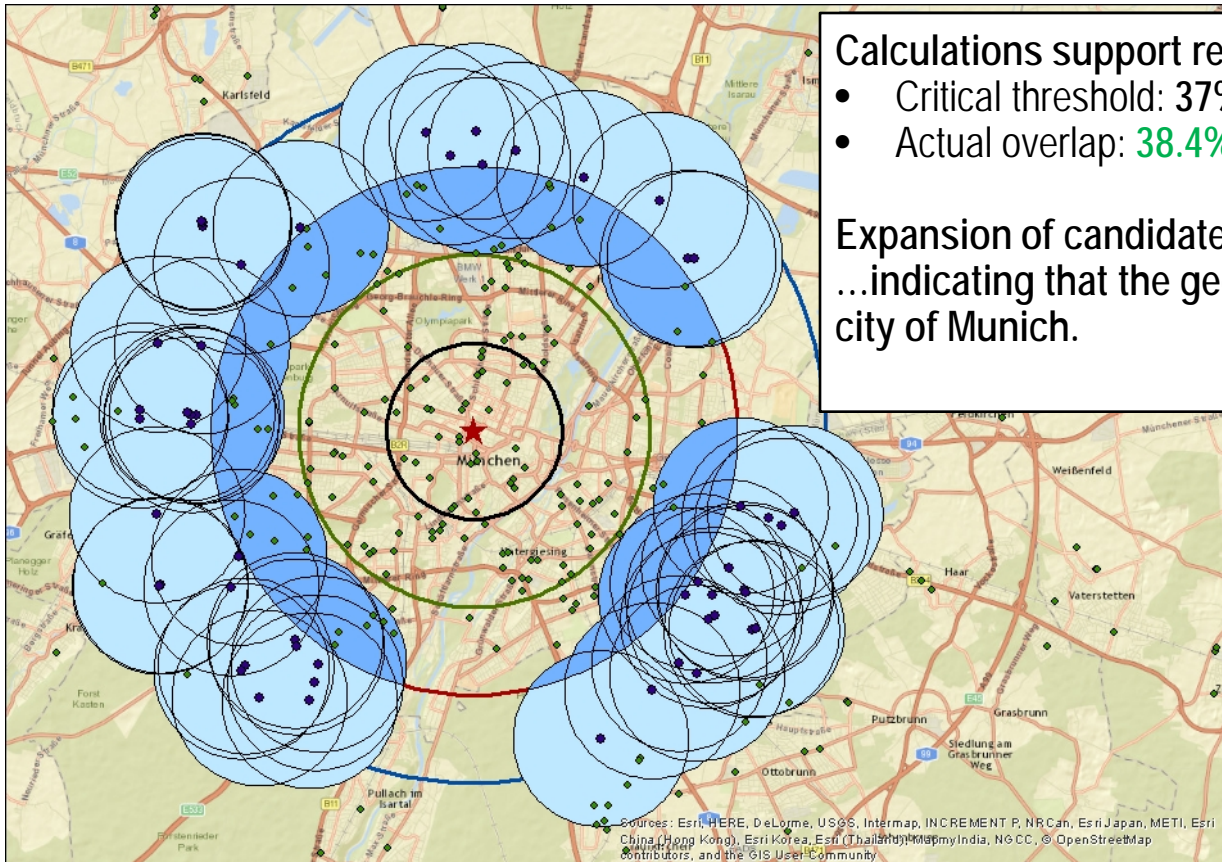


EDEKA/Kaiser's Tengelmann

Illustration Munich: example of amended analysis (cont'd.)

Innovative geoprocessing tools like ArcMap allow calculation of complex overlapping area (darkblue)

Step 3 (new)



Step 3 (old)



Calculations support result from 'eyeballing exercise':

- Critical threshold: 37%
- Actual overlap: **38.4%**

Expansion of candidate market in step 3 is confirmed...
...indicating that the geographic market covers the whole city of Munich.

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Geographic market definition and the Commission Notice

- Commission Notice surprisingly robust with respect to geographic market definition

General principles

- Market definition a first indications of competitive constraints only
- Universal approach for mergers, 101, 102, and – with some qualifications – State aid
- Market definition depends *on the nature of competition issues being examined*

Geographic market definition

- Sufficiently homogeneous conditions of competition/ appreciably different from others
 - Supply side substitution
 - Chain effects
 - Relevant data: differences in market shares, prices, diversion of orders to other regions, demand characteristics, supply side (distribution network), barriers to switch, trade flows
 - Market integration in the Community
- **More guidance helpful though:**
 - Empirical methods, e.g. chain effects and supply side substitution
 - Markets with capacity constraints, e.g. role of overcapacity/ swing capacities
 - Digital markets

Thank you!

Dr. Hans W. Friederiszick

Director
friederiszick@e-ca.com
+49 30 212 31 - 7010



E.CA Economics

Berlin Office

Schlossplatz 1
10178 Berlin

Tel.: +49 30 212 31-7009

Fax: +49 30 212 31-7099

info@e-ca.com

www.e-ca.com

Brussels Office

Avenue Louise 222
1050 Brussels

Tel.: +32 2 808-4704

Fax: +32 2 808-4744