

E.CA Economics

Merger trends in innovation markets

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Emerging trends in US and EU competition law

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Agenda

Introduction

Assessing the impact on innovation: tools and proxies

What do we know about the impact?

Conclusion

1. Introduction

- Two types of potential concern (Not mutually exclusive)
 1. Loss of rivalry in innovation between merging firms
 2. Reduction of ability and incentive of other firms to continue innovating
 - foreclosure concerns
 - input foreclosure: access to patents, interoperability, big data, ...
 - customer foreclosure: access to customers/markets
- Traditionally, the second concern (effect on other firms) has been the more prevalent in the EU (esp. in non-horizontal mergers)
- Convergence: EU increasingly also considering the first concern

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Identifying a trend

- Identifying a 'trend' requires looking back in time (how far?) and making a comparison with the present
- Possible past benchmarks?

Loss of rivalry	Effect on other firms
<ul style="list-style-type: none"> • Pharma cases: GSK (2000), Pfizer/Pharmacia (2003), ... • Agrochemical cases: AZ / Novartis (2000), Bayer / Aventis (2002), ... • ... 	<ul style="list-style-type: none"> • GE / Honeywell (2001) • Tetra Laval / Sidel (2001) • Philips / Agilent (2001) • GE / Amersham (2004) • ...

- To compare with present approach

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Recent cases: EU

- EU: high levels of recent “innovation scrutiny”, with more emphasis on loss of rivalry between merging firms

Loss of rivalry	Effect on other firms
<ul style="list-style-type: none"> • Halliburton Co./Baker Hughes (2016) • GE / Alstom (2015) • Pharma/medical devices cases: Pfizer/Hospira (2015), Novartis/GSK Oncology (2015), Medtronic/Covidien (2015) • Recent mobile merger cases • Deutsche Boerse / NYSE (2011) • HDD mergers (2011) • ... 	<ul style="list-style-type: none"> • Intel / Altera (2015) • Facebook / WhatsApp (2014) • ARM / Gieseke&Devrient (2012) • Intel / McAfee (2011) • ...

Recent cases: US

- US: effective recent challenges in
 - Halliburton Co./Baker Hughes (2016)
 - Applied Materials Inc./Tokyo Electron Ltd (2015)
 - Medtronic/Covidien (2015)
 - AT&T/T-Mobile (2011)

2. Tools and proxies

- Pipeline products
- Track record
- UPP / DIP
- Patent landscape / heat map
- R&D intensity

→ best used in combination with other sources of information: sectoral reports, internal company documents, customer views, ...

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Pipeline products

- Mostly relevant for pharma/agrochemicals/medical sectors
 - Market-to-pipeline
 - Pfizer / Hospira (2015)
 - Pipeline-to-pipeline
 - Novartis / GSK Oncology (2015)
- Possible extension to 'roadmaps' for new product introductions (information technology, microprocessors, ...)

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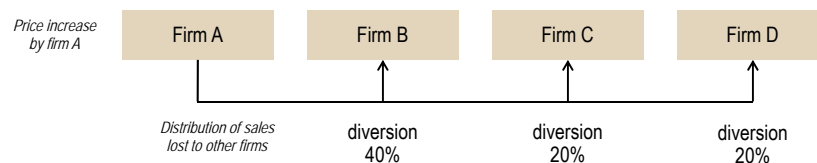
Track record

- In some markets (e.g. large industrial projects), ability to innovate best shown by a track record
- Track record may be well illustrated by analysis of bidding data
 - Capacity to innovate may strongly correlate with extent to which firms are invited to bid, which firms often are closest contenders, etc.
 - Example: GE / Alstom (2015)

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DIP - an analogue for UPP in innovation mergers?

- DIP: “Downward investment pressure”
- UPP (upward pricing pressure)
 - Proposed by Farrell/Shapiro/Willig/Werden, originally for changes in pricing incentives for differentiated consumer products. Logic extends to B2B sectors, however, and innovation.

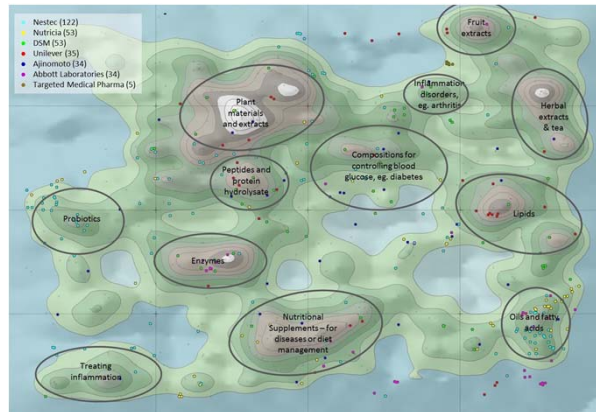


- “Innovation diversion ratio”
 - The fraction of the gross profits lost by Firm A to Firm B when it devotes less resources to innovation

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Patent landscape/heat map

- Patent landscape: provides measure of proximity (and diversion ratio?)
- Example: medical foods sector



Patent landscape Medical Foods industry.
Source:
<http://www.fstjournal.org/features/medical-foods>
(accessed 10.10.2016)
Example provided for illustrative purposes only.

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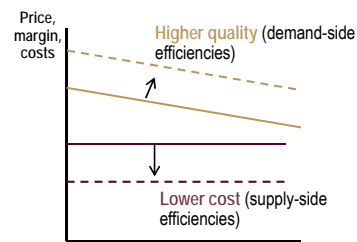
R&D intensity

- R&D levels and intensity of the different industry players can be a relevant metric (among others)
- Example: HDD mergers (2011)
 - Seagate/Samsung (2011)
 - Western Digital/Hitachi (2011)

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Assessment of efficiencies: an uphill road?

- Assessment of efficiencies in innovation markets: complex
- Multiple dimensions: product & process innovation



- Likely relevant question: are the companies complementary or not?
 - Example: TomTom / TeleAtlas (2008)

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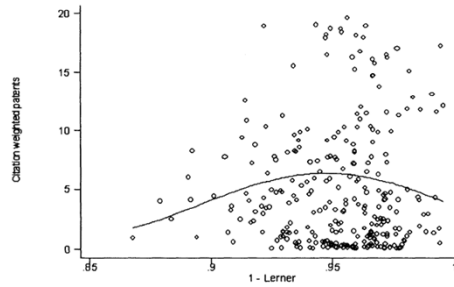
3. Mergers in innovation markets: what do we know?

- Economic literature on the relationship between competition and innovation (Inverted-U curve)
- Recent “ex post evaluation” studies
 - Mobile
 - Pharma

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Inverted-U curve

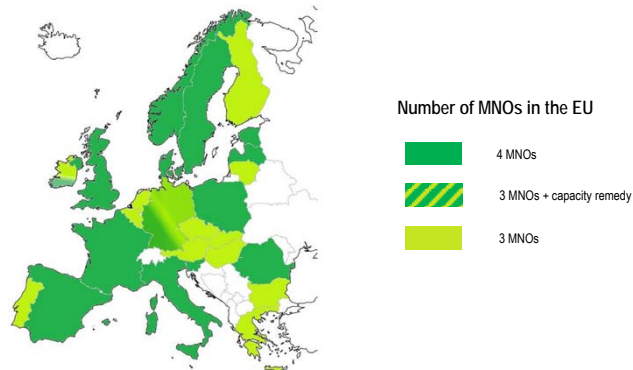
- Empirical finding: relationship between competition and innovation may follow inverted-U shape
- Drawing together competing views
 - Arrow: competition drives innovation (“escaping the competition”)
 - Schumpeter: prospect of (temporary) market power drives innovation (“creative destruction”)



Source: Aghion, Bloom, Blundell, Griffith, Howitt (2005), *Competition and Innovation: An Inverted-U Relationship*, QJE (Figure 1).

Recent “ex post evaluation” studies - mobile

- “Ex post evaluation” studies on mobile mergers
 - Focus mostly on price, but also on non-price dimensions
 - Investment levels → closely linked to innovation



Consolidation in EU mobile telecoms – a 2015 snapshot.
Source: E.CA Economics. Shows only MNOs with more than 1% subscriber market share

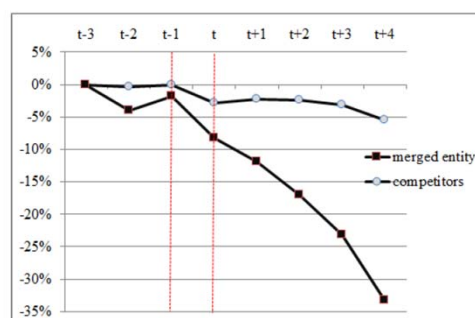
Findings on investment

- CRESSE study (Genakos, Valletti & Verboven, 2015): Trade-off. Consolidation appears to lead to higher prices and higher investment per firm (but: less firms in the market)
- Frontier for GSMA (2015): consolidation more likely to have positive impact

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Recent “ex post evaluation” studies – pharma

- Haucap and Stiebale (2016): mergers appear to lead to reduced patent output



Source: Haucap and Stiebale (2016),
Figure 1: Relative deviations from
predicted patent stock

- Ornaghi (2009): similar result

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4. Conclusion

- Merger policy in innovation markets – a dynamic area!
- Purpose of intervention clear enough in principle, but enormous challenges
- Standard of proof

Thank you!

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