Mergers in high tech industries & big data

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Competition

High tech markets - characteristics

- Rapid innovation
  - No need to intervene: dominant today, gone tomorrow?
- Pivotal role of intellectual property
  - Patents, Standard Essential Patents, FRAND
- Network effects
  - Tipping effects, barriers to entry, sunk costs, user lock-in etc.
- Competition *for* the market vs. competition *in* the market
  - New, disruptive technology limits relevance of market shares

High tech markets - characteristics

- Size does matter, but monopoly not required
  - Schumpeter: Monopolist has greater ability to finance costs and take risks of R&D
  - Areeda/Turner: no link between substantial market power and innovation
  - No justification to allow mergers which increase market power and thereby enable firms to profitably increase prices, reduce output, choice or quality of goods and services, or diminish innovation.
- Most high tech mergers occurred in ICT and pharma, Commission intervened on several occasions

High tech markets – legal framework

- Horizontal Merger Guidelines § 38:

  Effective competition may be significantly impeded by a merger between two important innovators, for instance between two companies with 'pipeline' products related to a specific product market. Similarly, a firm with a relatively small market share may nevertheless be an important competitive force if it has promising pipeline products.

- Non-horizontal Merger Guidelines § 29:

  A merger is said to result in foreclosure where actual or potential rivals' access to supplies or markets is hampered or eliminated

High tech markets - merger cases

- Cisco/Tandberg (2010): video-conferencing
- Microsoft/Skype (2011): internet consumer communications / video calls
- Intel/McAfee (2011): interoperability of its x86 processors with security solutions of McAfee's rivals
- Western Digital/Hitachi and Seagate/Samsung (2011): HDD storage
- ARM, Giesecke & Devrient/Gemalto/JV (2012): trusted (secured) execution environments for smartphones and tablets.
- Microsoft / Nokia (2013): OS for smart phones
- Facebook/ WhatsApp (2014) : Consumer Communications.
- Medtronic/Covidien (2014): drug coated balloons
- Avago / Broadcom (2015): Semiconductors
- NXP / Freescale (2015): Power transistors
- Intel / Altera (2015): Semiconductors
- Nokia / Alcatel (2015): telecommunications network equipment
- Novartis/GlaxoSmithKline oncology business (2015)
- Pfizer/Hospira (2015): biosimilar drug
- Western Digital / Sandisk (2016): Storage
- Dell/EMC (2016): Storage, Virtualisation software.

High tech markets - merger cases

CISCO

TANDBERG

M.5669

High tech markets – Cisco/Tandberg

- high combined market shares might increase Cisco's incentives post-merger to limit competitors' interoperability with its VCS thereby **raising barriers to entry and expansion**
- Cisco proprietary protocol, called **Telepresence Interoperability Protocol** ('TIP'), enables interoperability between Cisco's and other vendors' endpoints (multi-screens) – Pre-transaction!
- Assign its copyright to TIP and management of any updating of TIP to an independent industry body within 120 days from decision
- Pending fulfilment of Cisco's commitment to divest its rights to TIP, license TIP royalty free to any interested third party

High tech markets - merger cases

1) Hampering interoperability of Intel hardware with third-party security
2) Technical tying of Intel hardware and McAfee security
3) Commercial bundling of Intel hardware and McAfee security
4) Hampering interoperability of McAfee with non-Intel hardware (AMD, etc.)

M.5984

High tech markets – Intel/McAfee

- 5 year access (interoperability) remedy: vendors of rival security solutions will have access to all necessary information to use functionalities of Intel's CPUs and chipsets in the same way as those functionalities used by McAfee.
- Intel also committed not to actively impede competitors' security solutions from running on Intel CPUs or chipsets by committing for 5 years to allow to switch-off tied features.
- Finally, Intel will avoid hampering the operation of McAfee's security solutions when running on personal computers containing CPUs or chipsets sold by Intel's competitors.

High tech markets - merger cases

M.6564 ARM / Gemalto / G&D / JV

Trusted Execution Environment (TEE, a secure operating system)

High tech markets – ARM/Gemalto/G&D /JV

- ARM's IP is licensed with an integrated security technology called TrustZone. It provides the hardware layer for a TEE.
- The TrustZone technology is an essential input for TEEs. ARM could foreclose the JV's competitors by degrading the interoperability of alternative TEE solutions either by blocking and/or delaying the access to technical information on TrustZone or by technical integration.
- ARM commits, for a period of 8 years, to make the TrustZone Secure Monitor Code available for ARM's architecture free of charge on the its website; make any new version of the TrustZone Secure Monitor Code and other information available upon request; not to contractually tie its IP with the JV's TEE or to design its IP intentionally to degrade performance of third-party TEEs.

High tech markets – Storage

M.6203 – Western Digital/Hitachi (renamed Viviti Technologies)

A 3 to 2 merger, conditional clearance upon the divestment of essential production assets for 3.5-inch hard disk drives (HDD), including a production plant, transfer of personnel and accompanying IP rights.

High tech markets - Semiconductors

- M.7686 - Avago / Broadcom (2015): Avago owns IP for a technology allowing fast data transmission between chips to some of Broadcom's competitors. The Commission's concern was that after the takeover Avago could have had an incentive to withhold this intellectual property in order to extend the merged entity's leading market position in the so-called "switch chips" market.
- M.7585 -NXP / Freescale (2015): Merging parties are the two largest players and close competitors in the RF power transistors market, in particular those used in base stations for mobile telecommunications.

High tech markets – Pharma & Health Care

- M.7326 – Medtronic / Covidien: overlap between Medtronic's marketed and Covidien's pipeline product which had the potential for becoming a very effective DCB and thus become a serious challenger to Medtronic.
- M. 7559 - Pfizer/Hospira: overlap between Hospira's marketed and Pfizer's pipeline biosimilar drug for treatment of autoimmune diseases
- M. 7275 - Novartis/GSK oncology business: Novartis would drop the broad clinical trial program for its B-Raf and MEK inhibitors in several promising areas of cancer treatment.

High tech markets – Market definition

- Innovation markets
  - Markets for research and development directed to particular new or improved products and services
- R & D markets
  - Specialized assets such as patents, scientists and laboratories; research only.
- Markets for (SEP) patents/patent portfolios
  - e.g. LTE SEPs declared to ETSI standardization body Nokia/Alcatel § 212ff. Microsoft/Nokia § 186

High tech markets – Theories of harm

- Horizontal Mergers
  - Potential competition/likelihood of entry with pipeline product
- Vertical & Conglomerate Mergers
  - Input Foreclosure: Important IP rights
  - Customer foreclosure
  - Commercial Bundling & Technical Tying (Intel/McAfee)

High tech markets – Remedies

- Structural remedies
  - Divestiture of pipeline product
  - Transfer of IP rights
- Access remedies/Behavioural remedies
  - Access to information/Interoperability
  - Commitment not to do certain things (Intel/McAfee)

High tech markets – Efficiencies

- NHMG #13: vertical and conglomerate mergers provide substantial scope for efficiencies. In vertical mergers efforts to increase sales at one level (e.g. improve service or stepping up innovation) may provide a greater reward for an integrated firm
- M.4854 TomTom/Teleatlas: "better maps – faster".
  - substantial innovation efficiencies: information obtained from TomTom's users can be used to improve quality and timing of Tele Atlas' maps-creation.

Personal data and "big data"

- **Personal data** – any information that can identify individuals directly or indirectly
- **"Big data"** – the collection, storage and analysis of very large datasets that can reveal patterns of information that would not be visible from smaller datasets or individual data points
- Data can be viewed as the **raw material** of the information economy
  - Firms have built businesses around the collection and use of data
  - Data can be used to improve goods and services – by allowing understanding consumer behaviour and preferences (e.g. software, search, social networking, targeted advertising)
  - In two-sided markets - "personal data" as currency for free services (e.g. search or social networking)

Competition policy and data protection

- "Privacy violations" should be tackled primarily by data protection policy – *Asnef* antitrust judgment (2006) – competition policy not well placed to tackle these issues
- But the use of big data and personal data can be relevant to competition cases:
  - Big data as an "asset": consistent practice of checking whether the merger of "big data" tools or datasets would give the merged entity an insurmountable advantage over competitors (e.g. *Google/Doubleclick*)
  - Restrictions on data portability can increase switching costs and entry barriers
  - Personal data as "currency" and/or privacy as a dimension of competition/product quality

"Big data" merger cases

- Google/Doubleclick (2008)
- Microsoft/Yahoo! Search Engine (2010)
- Telefonica/Vodafone/Everything Everywhere (2012)
- Publicis/Omnicom (2014)
- Facebook/WhatsApp (2014)

Facebook/WhatsApp – data as "asset"?

- Facebook provides online targeted advertising services based on analysis of data collected from Facebook users
- WhatsApp does not collect data valuable for advertising purpose → no combination of datasets
- The Commission however assessed whether post-merger Facebook would collect data from WhatsApp users (which are also Facebook users) and gain an advantage for targeted advertising
  - Unclear whether Facebook would have the incentive to do so
  - In any event, the Commission found no competition concerns even if Facebook would use WhatsApp as a new source of user data, as there remain a sufficient alternative providers of online advertising services with access to user data valuable for advertising purposes

Facebook/WhatsApp – privacy as dimension of product quality?

- The Commission found that privacy was one of many parameters of competition between consumer communications apps along with other parameters such as price, reliability of the service, functionalities offered, size of the network, trendiness, etc.
- The majority of consumer communication apps do not compete (mainly) on privacy features – with some exceptions such as apps offering increased security of communications like Threema or Telegram
- The Commission's decision is without prejudice to the application of EU data protection rules to any privacy-related concerns flowing from the increased concentration of data within the control of Facebook

Conclusion

- Big data relevant for competition assessment in digital economy
- Merger enforcement has the potential to complement data protection law where protecting competition includes protecting privacy as an important parameter of competition/privacy concerns tied to a significant impact on effective competition
- Competition tools are "fit for purpose"; but this requires a very fact-specific assessment linked to the features of the market; the position of the players; the barriers to entry; etc.
- So far no case of anti-competitive use of big data or personal data, but this cannot be ruled out