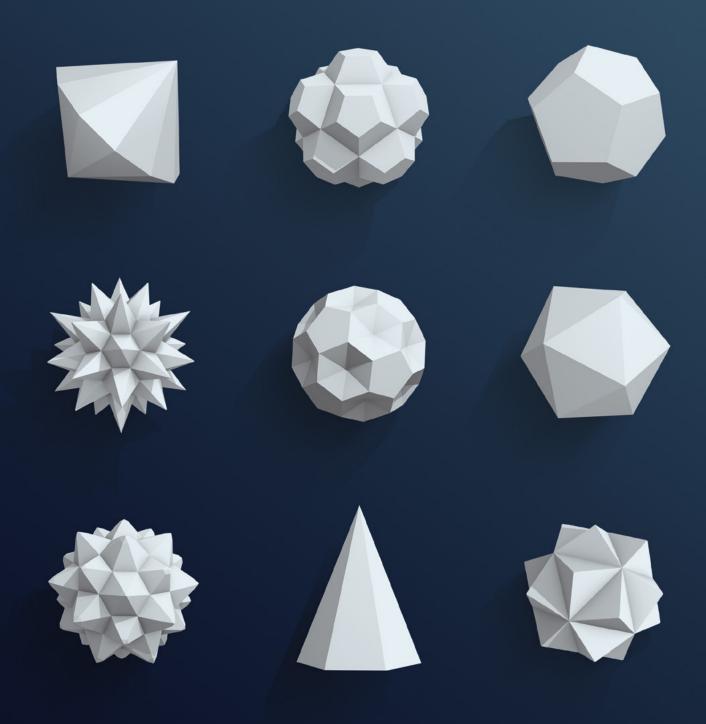
European Competition

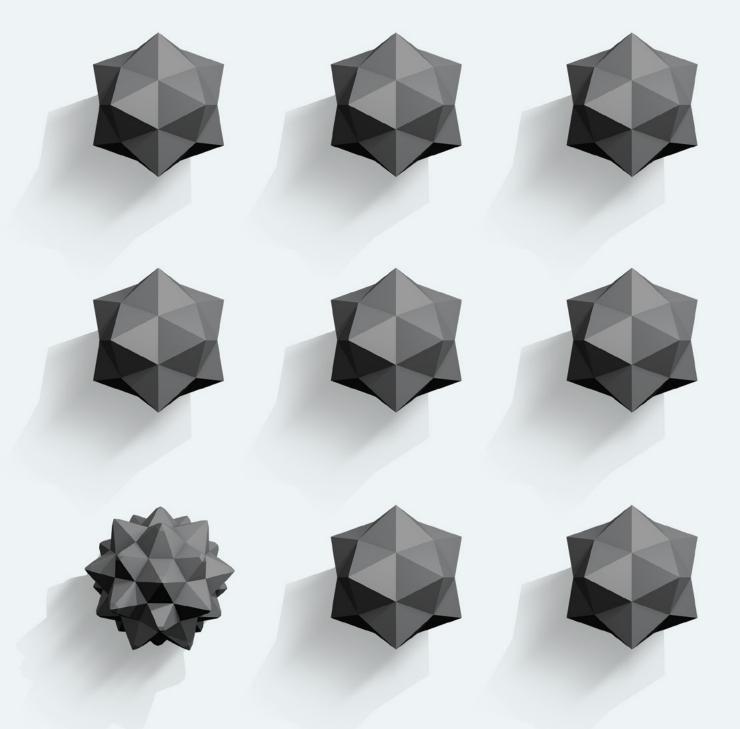


CRA Charles River Associates Charles River Associates is at the forefront of European competition economics.

Based in London, Brussels and Paris, and working closely with our network of academic economists, we have advised many clients on a wide range of competition issues, including several milestone cases that have contributed to the development of competition policy in Europe. We are also closely integrated with CRA experts in our North American offices, drawing on each other's expertise and working together on transatlantic matters.

We can quickly mobilise our analytical and datahandling resources to help clients navigate the competition investigation process and make the best possible economic case. We focus on giving clear and accurate advice: getting meaningful evidence out of the available data; communicating clearly with the client; supporting the legal team in developing the key competition arguments; and engaging constructively on substance with the competition authorities.

To learn more visit us at www.crai.com/ecp



The theory that fits the facts

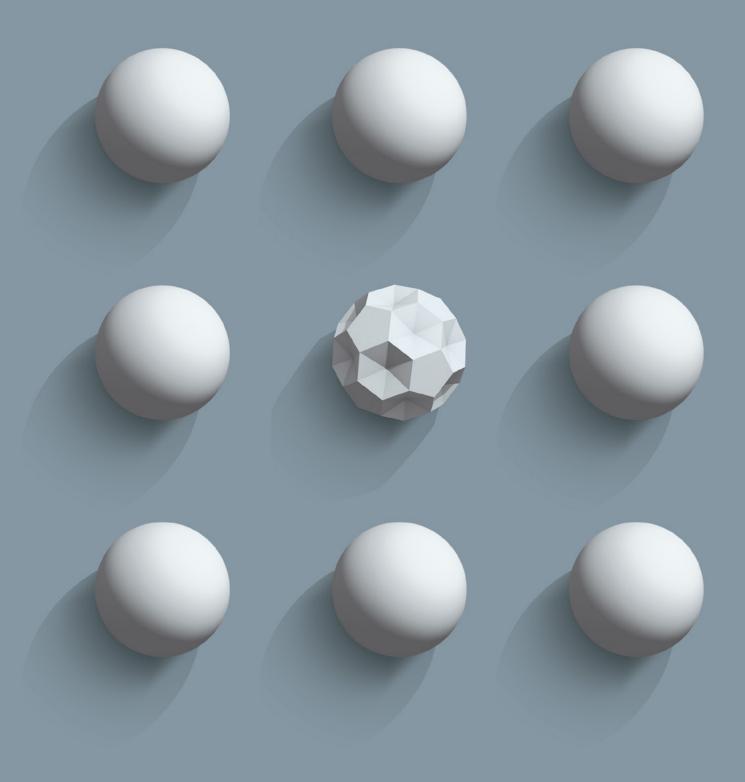
We combine technical economic expertise with an understanding of the practical drivers of business decisions. By translating the reality of our client's business environment into the economic framework used by competition authorities, we address the economic concerns put forward in the most effective way.

Dealing with competition issues is challenging: whether pursuing a merger with a rival, supplier or customer; facing allegations of abuse of a dominant position; defending against accusations of involvement in a cartel; or dealing with a damages claim. These challenges often involve high stakes and complex questions of law and economics that call for external advice and assistance.

This is where we can help. The 'theories of competitive harm' considered by competition authorities are often based on sophisticated economic analyses, making use of recent developments in economic theory as well as advanced econometric techniques. These theories may sometimes seem abstract or even far-fetched from a business perspective. We translate these theories into the real language of business and work with clients to respond to them. Liaising closely with the business and legal teams, we study the facts and examine the competition implications of business practices and market structures.

We provide the interface between business reality and the economic models of behaviour which underpin modern competition law.

Whether the client's business is in fast-moving consumer goods or energy, high-tech industries or commodities, construction or services, we have the skills and the experience to understand and explain how the competition faced by the client operates in an economic framework. We quickly deploy our resources and bring our energy and expertise to bear to identify and respond to the key issues in each case.



Breadth of experience

extensive experience advising on competition matters.
We have provided support to leading businesses on hundreds of competition investigations, including some of the most influential cases of recent years.
We use economic theory and empirical tools to analyse markets, identify the key questions, and formulate an engaging and persuasive economic response.

Mergers

Empirical and theoretical analyses are now central to merger investigations. Theories of harm are carefully tested against economic theory and data, often including detailed transaction-level data, as well as against internal documents. Our advice is often sought at the planning stage of a transaction: to identify competition problems as early as possible and undertake pre-emptive work that can smooth and speed up the progress of the notification process. We have helped many clients gain approval in the first phase of an inquiry, thereby avoiding a full-scale investigation. We have been involved in many of the landmark cases that set the course of current merger control in Europe, as well as some of the most controversial European Commission and court cases of recent years.

Abuse of dominance

The European Commission's Guidance paper has embraced a more economics-based approach to abuse of dominance, focusing on the *effect* rather than merely the *form* of behaviour. Practices such as bundling and discounts can strengthen rather than hinder competition, even when carried out by a dominant firm, so careful analysis of the effects of conduct is vital. We have worked on some of the most high-profile cases in recent years, including cases involving Tomra, Intel, Servier, Google and investigations on the enforcement of intellectual property rights in mobile standards. We also often advise on these issues outside the confines of an official investigation, working with the client's legal team to assess whether existing or planned conduct might constitute an abuse.

Vertical and horizontal agreements

Effects-based analyses are also playing a much greater role in the assessment of agreements, whether vertical (between suppliers and customers, such as 'most-favoured-nation' clauses) or horizontal (including JVs and information exchanges). Vertical agreements often carry strong efficiency benefits, so that an effects-based economic analysis is crucial in distinguishing between problematic and beneficial cases. Similarly, economics plays a role in identifying whether an exchange of information had an adverse effect on competition in the market. Even in cartel cases economics is playing a greater role – especially in terms of assessing the effectiveness of the cartel, which can be an important element in negotiating a settlement with the authorities.



Damages and competition litigation

CRA economists have acted as expert witnesses in numerous litigation matters, presenting economic evidence and being cross-examined before courts and tribunals in a number of jurisdictions. An increasingly important area is the assessment of follow-on claims for damages arising from cartel behaviour, where the extent of the damage has to be estimated using economic analysis. CRA has played a leading role in numerous recent cartel damages cases.

Other competition litigation cases we have been involved in include abuse of dominance cases, anti-competitive agreements (and related damages), and regulatory disputes. As private damages litigation increases, we are also advising in more complex cases involving sophisticated analysis of the counterfactual: for example, litigation in the UK on the setting of interchange fees and competition issues arising from litigation on IP licensing.

Regulated industries and sector inquiries

We have a very strong record advising clients on competition issues in regulated industries, with a particular focus on energy, telecoms, broadcasting, post and water. Mergers in regulated sectors have also attracted close scrutiny, with complex remedy packages designed to accelerate liberalisation. CRA combines strength in competition analysis with detailed knowledge of a broad range of regulated industries.

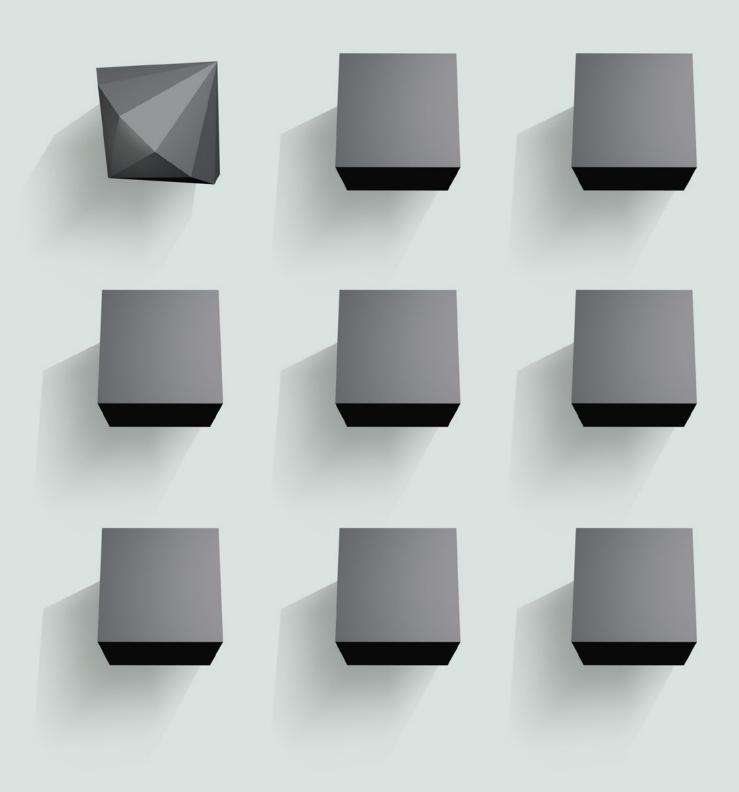
We have also acted for numerous clients in the context of sector inquiries, where authorities have a specific concern that competition is not working well in a given industry.

Intellectual property rights

Recent years have seen an increase in the number of antitrust investigations of the behaviour of holders of important IPRs. The importance of IPRs in the assessment of horizontal mergers has also come to the fore in numerous cases. From investigations of standard-essential patent licensing to 'pay to delay' settlements, we have been deeply involved in the issues arising on the IP/competition policy interface. Our involvement reflects our unique ability to combine excellence in competition analysis with a deep and long-established understanding of IP issues on both sides of the Atlantic.

State aid

State aid has become a central concern of the European Commission and this has coincided with a more economic approach to the assessment. State aid cases took on a new dimension in the wake of the 2008 financial crisis, as the unprecedented severity of the crisis resulted in significant amounts of State support being granted to financial institutions and other companies. We have advised on the terms of some of the most high-profile government interventions, such as the restructuring of the Irish banking sector.



Depth of experience: mergers

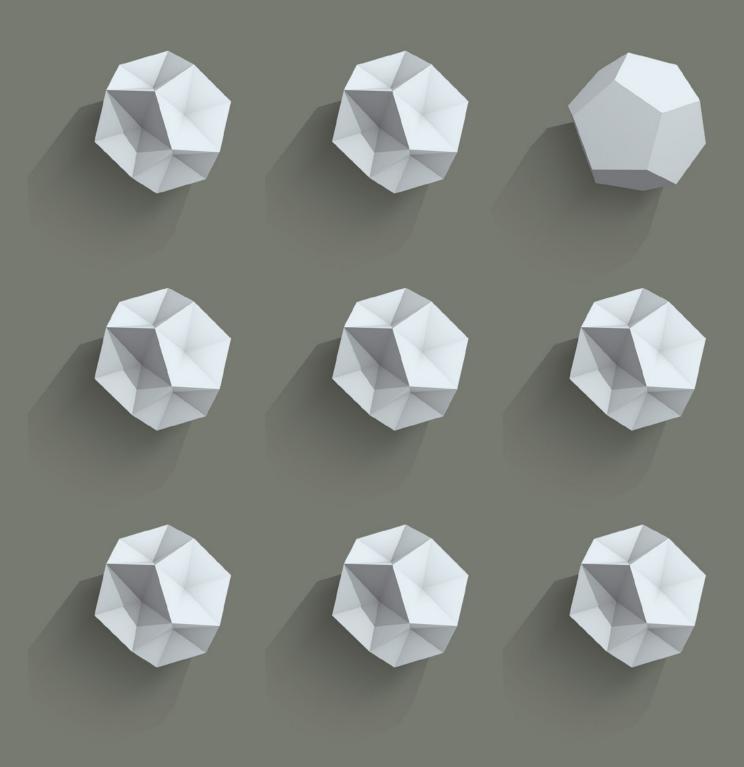
Empirical and theoretical economic analyses are central to all competition investigations. CRA has advised on many of the most important competition cases of recent years before the European Commission, national European competition authorities and elsewhere

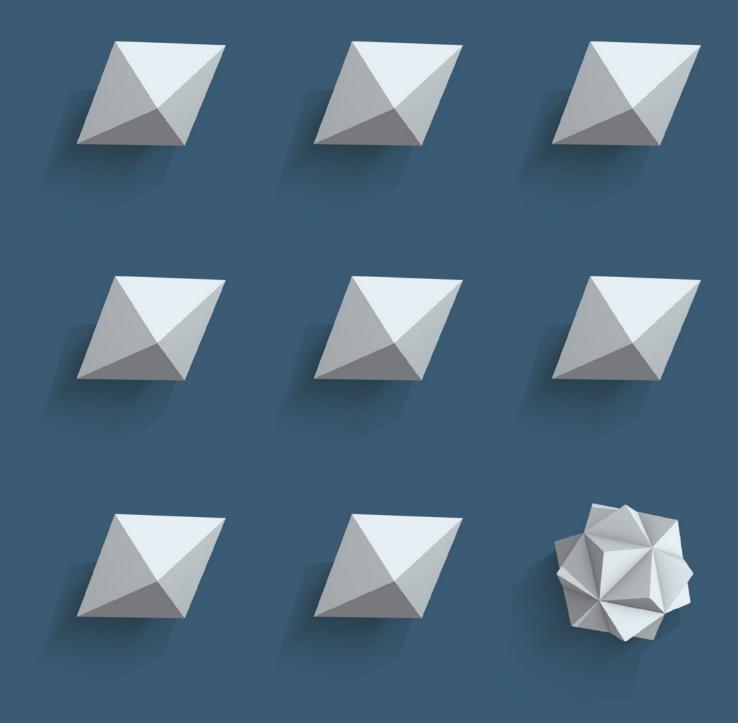
Italics indicate cases where we worked against the merger.

| European Commission | |
|---|---------|
| ChemChina/Syngenta | 2016 |
| Abbott/Alere | 2016 |
| Reichhold/Polynt | 2016 |
| Hutchinson 3G Italy/Wind JV | 2016 |
| Deutsche Börse/LSE | 2016 |
| Vodafone/Liberty Global Dutch JV | |
| Microsoft/LinkedIn | 2016 |
| Yahoo/Verizon | 2016 |
| International Paper/Weyerhaeuser Pulp | |
| Airbus Safran Launchers/ Arianespace | 2015-16 |
| Avago/Broadcom | 2015 |
| Hutchinson 3G UK/Telefonica UK | 2015 |
| Liberty Global/BASE Belgium | 2015 |
| Halliburton/Baker Hughes | 2015 |
| General Electric/Alstom | 2015 |
| (Power & Grid) | |
| IAG/Aer Lingus | 2015 |
| Orange/Jazztel | 2015 |
| Novartis/GSK | 2015 |
| Pfizer/Hospira | 2015 |
| Ball/Rexam | 2015 |
| TEVA/Mylan | 2015 |
| CommScope/TE Connectivity | 2015 |
| INEOS/Doeflex | 2014-15 |
| BP/Statoil Fuel and Retail Aviation | 2014 |
| Liberty Global/Ziggo | 2014 |
| Eli Lilly/Novartis Animal Health | 2014 |
| Alcoa/Firth Rixson | 2014 |
| Dolby/Doremi | 2014 |
| Hutchison 3G UK/Telefonica Ireland | 2013-14 |
| Hapag Lloyd/CSAV | 2013-14 |
| INEOS/Solvay | 2013-14 |
| INEOS/SSG | 2013-14 |
| Siemens/Invensys | 2013 |
| Baxter/Gambro | 2012-13 |
| Delta/Virgin Atlantic JV | 2012-13 |
| Ryanair/Aer Lingus | 2012-13 |
| Refresco/Gerber | 2012 |
| Schlumberger/Cameron | 2012 |
| UPS/TNT | 2012 |
| H3G/Orange Austria | 2012 |
| Outokumpu/Inoxum | 2012 |
| Universal/EMI | 2011-12 |
| UTC/Goodrich | 2011 |
| INEOS/Tessenderlo S-PVC Assets | 2010-11 |
| Südzucker/ED&F Man | 2010 |
| Linde/Air Products | 2010 |
| Cisco/NDS | 2010 |
| Caterpillar/MWM | 2010 |
| INEOS/BASF Styrolution JV | 2010 |

| Other invited ations | |
|---|---------|
| Other jurisdictions | 2016 |
| VTech/LeapFrog | 2016 |
| Fnac/Darty Euro Car Parts/Andrew Page | 2016 |
| Cellcom/Golan | 2016 |
| Kineopolis/Utopolis | 2016 |
| Hain Frozen Foods/Orchard | 2016 |
| House | 2010 |
| Telkom/BCX | 2016 |
| Hammerson/Grand Central | 2016 |
| ICE/Trayport | 2016 |
| Whittan Intermediate/Masondixie | 2016 |
| Ladbrokes/Coral | 2015-16 |
| Celesio/Sainsbury's Pharmacies | 2015-16 |
| Tullett Prebon/ICAP | 2015-16 |
| Ahold/Delhaize | 2015-16 |
| Whittan Intermediate/Apex Linvar | 2015-16 |
| AAH Pharmaceuticals/MASTA | 2015-16 |
| and Sangers | |
| BCA Marketplace/SMA Vehicle | 2015-16 |
| Remarketing | |
| PKP CARGO/ORLEN Koltrans | 2015-16 |
| BT/EE | 2015-16 |
| Nets/Nordea Merchant Acquiring | 2015 |
| Foxtel/Channel 10 | 2015 |
| Kingfisher/Mr Bricolage | 2015 |
| GTCR/Gorkana | 2015 |
| Pork Farms Caspian/Kerry Foods | 2015 |
| Atos Medical/Countrywide Supplies | 2015 |
| Numericable/SFR | 2014 |
| Applied Materials/Tokyo Electron | 2014 |
| Continental/Veyance | 2014 |
| UnitedHealth Group/Espirito Santo | 2014 |
| Nocibé/Douglas | 2014 |
| Orlait/Terra Lacta | 2014 |
| WGSN/Stylesight | 2014 |
| IRI/Litmus | 2013-14 |
| Essilor/Transitions | 2013-14 |
| Auchan/Real | 2013 |
| Bauer/Absolute Radio | 2013 |
| AmeriGas/LPG | 2013 |
| AEG/Wembley Arena | 2013 |
| OUP/Nelson Thornes | 2013 |
| Thomson Reuters/PLC | 2013 |
| Fintrax/TFW | 2013 |
| Rexel/Wilts Wholesale Electrical Company | 2012-13 |
| Ryanair/Aer Lingus | 2012-13 |
| Global Radio/GMG | 2012-13 |
| Becton Dickinson/SSI | 2012 |
| VPS/SitexOrbis | 2012 |
| HH. Thiele/Vossloh | 2012 |
| ITI/Canal+ | 2012 |
| CanalCatallita /TDC | 0010 |

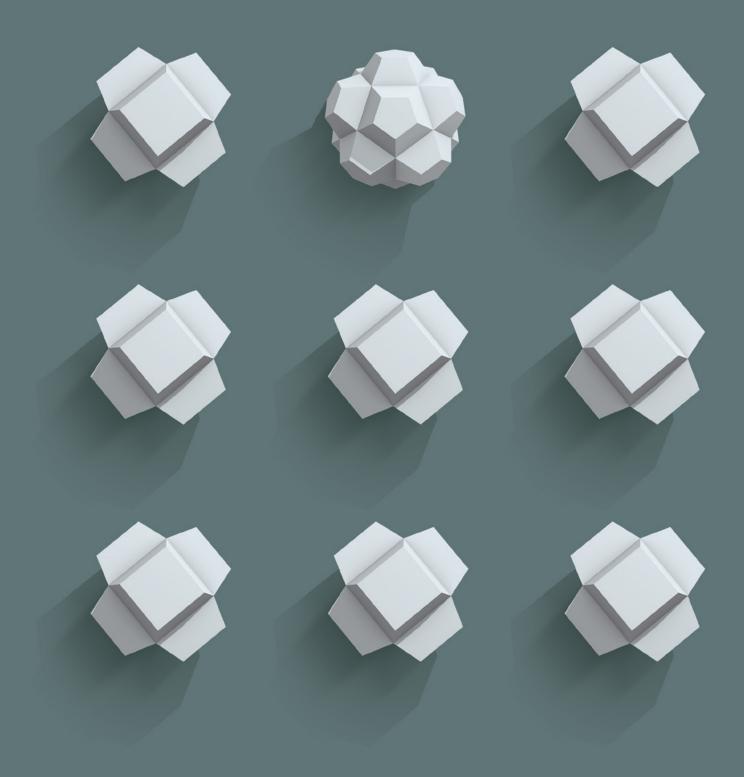
CanalSatellite/TPS





Anti-competitive practices, litigation and sector inquiries

| Abuse of dominance | | Restrictive agreements | | Litigation |
|---------------------------------------|---------|------------------------------|---------|---|
| Fox Netherlands (TV distribution) | 2016 | Auction Services | 2016 | SFR Group vs Orange |
| BT (Margin Squeeze) | 2016 | Light Fittings | 2016 | (French commercial court, 2016) |
| Mobile call termination | 2016 | Cement | 2016 | Numericable vs Bouygues Telecom |
| GSK (Seretide) | 2016 | Automotive Interior Products | 2016 | (French commercial court, 2016) |
| Immoweb (MFNs) | 2016 | Heating Appliances | 2015-16 | NRJ vs Fun Radio |
| Flynn Pharma (Phenytoin Sodium) | 2015-16 | Consumer Electronics | 2015-16 | (French court, 2016) |
| | 2015-16 | Cathode Ray Tubes | 2015-16 | National Grid Electricity Transmission |
| Exclusivity) | | Pay TV Contracts | 2015-16 | PLC vs ABB et al (High Voltage Cables) |
| | 2010-16 | Car Carriers | 2014-16 | (UK High Court, 2016) |
| Android | 2015 | Coffee | 2014-16 | Automotive OEMs and Tier 1 suppliers vs |
| SFR (Telecoms) | 2015 | Paroxetine | 2012-16 | SKF and others |
| , , | 2014-15 | Health Insurance | 2015 | (UK Competition Appeal Tribunal, UK High |
| • | 2014-15 | Online Commerce | 2015 | Court & others, 2016) |
| , | 2011-15 | Beer | 2015 | Follow-on damages actions from the German Wood-Based Products |
| | 2013-14 | Rental Vehicles | 2015 | Cartel decision |
| | 2011-14 | Computer Games | 2014-15 | (German courts, 2015-) |
| | 2012-13 | Hotel Booking Platforms | 2014-15 | Ioan and Viorel Micula and the |
| Samsung & Motorola (UMTS and | | Precious Metals | 2014-15 | Micula Companies vs Romania |
| GPRS Standard Essential | | Parcel Services | 2014-15 | (ICSID 2015-) |
| Patents) | | Liner Shipping | 2014-15 | Follow-on damages actions from |
| · · · · · · · · · · · · · · · · · · · | 2011-13 | Personal Care | 2014-15 | the German Sugar Cartel decision |
| Inhibitors) | 2011 10 | Trucks | 2013-15 | (German courts, 2014-) |
| Douwe Egberts (Coffee Machines) | 2011-13 | Dairy Products | 2012-15 | Various major UK retailers vs |
| _ , , , | 2011-13 | Pressure Washers | 2014 | Visa Europe & Visa Inc |
| | 2011-13 | Milling | 2014 | (UK High Court, 2014-) |
| | 2011-13 | Container Shipping | 2014 | Emerald Supplies Limited & Ors vs |
| | 2009-13 | Foreign Exchange | 2014 | British Airways and Air Canada & Ors |
| | 2009-13 | Sports Bras | 2013-14 | (UK High Court 2013-) |
| | 2008-13 | Credit Default Swaps | 2013-14 | The Minister for Finance and Ireland |
| de Presse | | Libor | 2012-14 | vs Aer Lingus Limited (Ireland High Court 2013-) |
| | 2011-12 | E-books | 2010-14 | Follow-on damages actions from |
| • | 2011-12 | German Supermarkets | 2010-14 | the EC Car Glass decision |
| SRR (On Net – Off Net) | 2011 | Personal Care and Detergents | 2013 | (UK/German courts, 2012-) |
| | 2010-11 | Wire Harnesses | 2011-13 | Google vs Bottin Carto |
| | 2009-11 | LCD Screens | 2011-12 | (Cour d'appel de Paris, 2012-) |
| | 2008-11 | Car Glass | 2010 | Deutsche Bahn vs rail track suppliers |
| (| | South African Diesel | 2010 | (German courts, 2011-) |
| Sector inquiries | | Payment Cards | 2009 | Rory McIlroy vs Horizon Sports |
| • | 2015-16 | Wheat Flour | 2009 | Management |
| | 2015-16 | Luxury Goods | 2008 | (Ireland High Court 2014-2015) |
| Corporate Banking | | Supermarkets | 2008 | CDC & others vs Sasol Wax & |
| | 2013-16 | Airfreight | 2007-08 | others (Paraffin Wax) |
| Current Accounts | | Waste Collection | 2006-08 | (UK High Court and Dutch courts, |
| | 2009-16 | Mobile Phone Handsets | 2006-08 | 2011-2015) |
| France Supermarkets | 2015 | Steel | 2007 | BT vs Ofcom |
| UK FCA Credit Cards | 2015 | HGVs | 2007 | (UK Competition Appeal Tribunal, 2014) |
| France Notaries | 2014 | Tobacco | 2007 | National Grid Electricity Transmission PLC |
| UK Next Generation | 2014 | Construction | 2007 | vs ABB et al (Gas Insulated Switchgear) (UK High Court, 2012-14) |
| Access Broadband | _0 | Bananas | 2006-07 | NHS + Others vs Reckitt Benckiser |
| | 2012-13 | Dairy Products | 2004-07 | (UK High Court, 2011-14) |
| | 2011-12 | Jet Fuel | 2003-07 | Dow Corporation vs Cooper et al |
| France Sport Betting | 2011 | | | (UK High Court, 2010-14) |



Shaping the economic arguments

economists with the ability
to use advanced economic
modelling and econometric
analyses. This includes
developing economic models
of firms' and consumers'
behaviour, drawing on industrial
organisation theories, bargaining
and auction theories, and
behavioural economics. In each
case we assemble a team with
the right expertise and experience
to address the competition
question in the most efficient

Modelling how markets work

We are at the forefront of developments in competition economics and use the most relevant economic tools to address the competition concern. Where appropriate, this includes using advanced economic theory to model how competition works in the market. This approach ensures the economic analyses we submit are persuasive and credible. It also means we contribute to the evolution of the agencies' thinking and practice. For instance, CRA economists have been heavily involved in the development and use of 'price pressure tests', which competition agencies in a number of jurisdictions are increasingly using to assess mergers. This puts us in a strong position to engage with the authorities when they put these new techniques into practice.

Empirical analysis

Our reputation is for rigorous and innovative empirical analysis and careful attention to detail. While we benefit from a large and experienced team of econometric experts, all our analyses are rooted in a careful understanding of the realities of the client's business and of the available data. There are also many industries where a creative approach to data collection is necessary. Often the most interesting and insightful 'data' is the knowledge embedded in the client's financial and marketing teams, rather than in an existing database. We are experienced in gathering such information and presenting it in a meaningful way to competition authorities.

We also draw on the knowledge and experience of our wide network of academic associates, each a leading thinker in their field of expertise, and including two previous Chief Economists at the European Commission. We integrate rigorous analysis with practical support to clients and their legal advisors in drafting submissions and responding to information requests from the competition authorities. Such requests often require clients to extract, collate and format large volumes of data to meet the authorities' requirements within tight timescales. We work with clients and the economists in the authorities to make the process of responding to such requests as efficient as possible.

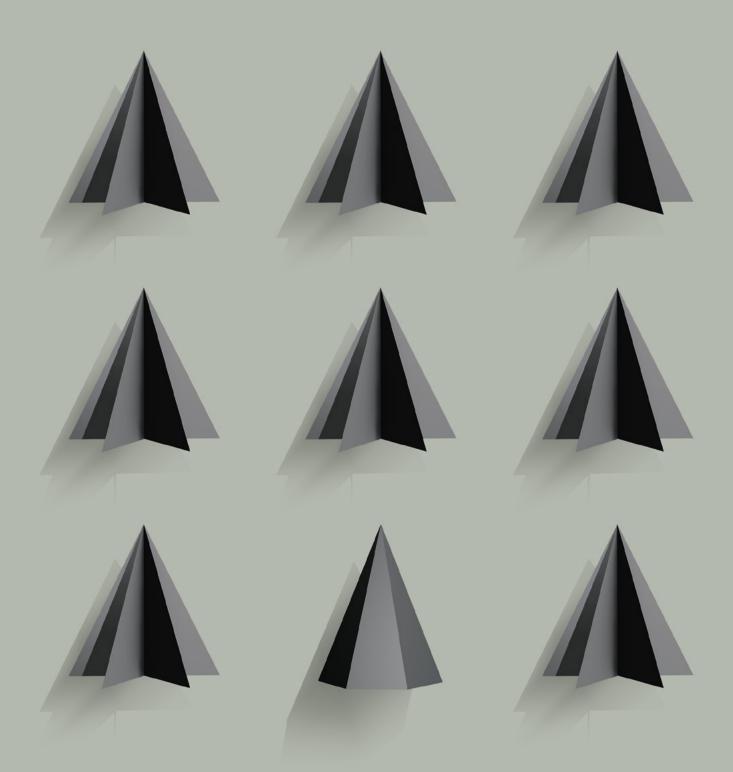


Building the best case

We put our reputation behind the arguments we present and are known for careful and rigorous analysis, ensuring that a CRA submission or testimony carries weight with competition authorities and courts around the world.

CRA senior staff members have acted as experts before the courts across Europe and the US, as well as before specialist tribunals such as the UK Competition Appeal Tribunal, the UK High Court, the Irish High Court, the South African Competition Tribunal and the International Court of Arbitration. Expert witness work requires the ability to defend the analysis undertaken in the face of cross-examination. Our experience and analytical rigour ensures a strong performance when working on these cases.

Even where expert testimony is not needed, we apply the same attention to detail and accuracy in our written reports. Working with clients and legal teams to develop evidence for key submissions, we are often asked to produce an economic report to shed light on certain key aspects of the competition argument. We have a strong reputation for the type of high-end, sophisticated modelling and quantitative analyses that are necessary to convince the technical specialists within the competition authorities, and are also highly skilled in making these concepts accessible to a non-technical audience.



Getting the right result

Bringing together our economic expertise with business knowledge and legal advisors' insights, we work as part of an integrated team. This allows us to communicate the competitive reality of your market to the authorities as effectively as possible, while minimising the inevitable burden on your internal resources.

Whether you are pursuing a merger or defending an abuse of dominance claim, facing damages litigation or interacting with your industry regulator, we will use our insight and energy to get to the bottom of the economic issues and find solutions: building the economic arguments to support your case and, where necessary, thinking creatively about remedies to resolve concerns.

To learn more about our expertise and service offerings, contact our nearest regional office or visit us online at www.crai.com/ecp

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