

Neutral Citation Number: [2016] EWHC 253 (Ch)

IN THE HIGH COURT OF JUSTICE
CHANCERY DIVISION

Royal Courts of Justice
Strand, London, WC2A 2LL

Date: 12/02/2016

Before :

MR JUSTICE ROTH

Between :

STREETMAP.EU LIMITED	<u>Claimant</u>
- and -	
(1) GOOGLE INC.	
(2) GOOGLE IRELAND LIMITED	
(3) GOOGLE UK LIMITED	<u>Defendants</u>

MARK HOSKINS QC and DAVID BAILEY (instructed by **Preiskel & Co LLP**) for the
Claimant
JON TURNER QC, JOSH HOLMES and BEN LASK (instructed by **Bristows LLP**) for the
Defendants

Hearing dates: 4, 5, 6, 9, 10 and 16th November 2015

Judgment

<u>CONTENTS</u>	Para.
INTRODUCTION	1
THE PARTIES	5
THE FACTS	8
Search engines	10
Online maps	15
The Google Maps OneBox	25
THE CLAIM	35
Summary	35
The legislative framework	36
Dominance	41
The trial	44
ABUSE	50
The allegations	50
Foreclosure	62
Intention	66
Effect	84
Objective justification	140
CONCLUSION	175
Appendix	
Glossary	

Mr Justice Roth:

INTRODUCTION

1. This is the trial of a preliminary issue concerning an alleged abuse of a dominant position contrary to UK and EU competition law.
2. As is well-known, the internet has had a profound effect in changing the way in which many traditional goods and services are offered to the public and in enabling the introduction of new kinds of products altogether. It has developed rapidly since about the mid-1990s, both as regards technical innovation and in the spread of internet usage.
3. This development presents a challenge for competition law. It is obviously important that competition law should apply fully and effectively to what has become a very significant form of commerce. However, the appropriate application of some of the concepts of competition law must have regard to the particular characteristics of this new environment.
4. That is the context for the present case, which involves the interaction of competition between online search engines and competition between suppliers of online maps. In essence, the claimant contends that the defendants abused a dominant position in general search engines by the prominent and preferential display given to their own related online map product, thereby restricting competition from competing suppliers of online maps in Great Britain.

THE PARTIES

5. The claimant is the successor to the rights of BTex Ltd (“BTex”), an English company established by Ms Penny Bamborough, which began providing online mapping services in 1997 under the name “Streetmap”, through the website www.streetmap.co.uk. BTex went into voluntary liquidation in May 2009, allegedly on account of the conduct of the defendants impugned in this case, and the claimant’s rights have been acquired through the liquidator. Like BTex, the claimant is wholly owned by Ms Bamborough and Ms Kate Sutton. It is unnecessary for the purpose of this judgment to distinguish between the claimant and BTex and I shall refer to them both as “Streetmap” and use the same word to refer to its online mapping product: the context should make clear which is intended.
6. The 1st defendant was incorporated in 1998 and is now a Delaware corporation. It developed and operates the most popular online search engine in the world and provides related online advertising. Such is the prominence and ubiquity of this search engine that “to Google” is widely used as a verb meaning to search on the internet using the Google search engine. In early 2005, the 1st defendant launched an online mapping product, called “Google Maps”, and it has also developed and introduced other online products and specialist services.
7. The 2nd and 3rd defendants are wholly owned subsidiaries of the 1st defendant, concerned with aspects of the group’s commercial operations in, respectively, Europe and the UK. However, by their common defence, the defendants asserted that the 2nd and 3rd defendants have no involvement in the operation of the Google search engine or the conduct complained of, and that has not been challenged by Streetmap. Accordingly, the case has proceeded on the basis that the claim lies against the 1st defendant. I shall refer to the 1st defendant simply as “Google”.

THE FACTS

8. A particular feature of this case is that both products involved, viz, general search engines and online maps, are free to users. They are both classic examples of what economists refer to as multi-sided markets: the commercial operators are dependent for their revenue to a large extent on remuneration from businesses through online search advertising (and in the case of Streetmap, also on supply of its product to businesses for embedding in their own websites). Although there are various ways in which revenue from online advertising may be structured, they share the feature that the more attractive the online product is to users, the greater the advertising revenue that will be earned. Attraction to users involves two aspects: the number of users and the frequency of use.
9. To put Streetmap’s allegations in context, it is necessary to describe in brief outline the two products involved: general search engines and online maps. I emphasise that what follows is not by any means a comprehensive description of either product. A glossary of some of the terms used is appended to this judgment. I should add that although Streetmap also alleged that Google was

dominant in a distinct market for online search advertising, nothing turned on that potential alternative or additional dominant position for the purpose of the issues considered in this trial and it is unnecessary to consider it further.

Search engines

10. The Google search engine (“Google Search”) with which this case is concerned is a general search engine: it is not restricted to or specialised in any particular kind of subject-matter or content. Such a search engine seeks to search the whole of the World Wide Web for results relevant to a user’s query. The visual display of the results is referred to as the “search engine results page” or “SERP”, although when many results are found the SERP may comprise several pages and even on the first page some of the results lower down may appear “below the fold”: i.e. the user will have to scroll down to see them on his or her screen.
11. The SERP includes links to relevant websites or webpages, which are identified by hypertexts on which the user can click for direct access to the site or page: since they appear underlined in blue, these are often referred to as “blue links”. The selection and ranking of these blue links is achieved through the application of sophisticated and commercially prized search algorithms, which are frequently refined. However, the displayed results are not limited to blue links and may include also images, videos and other information, which may also incorporate a clickable hyperlink. The display of such other information, also obtained by algorithms, has considerably developed and continues to do so. As explained more fully below, such further information may include maps, and it is that specific development which lies at the heart of this case. The SERP generally also displays sponsored advertising links, which may be search-targeted advertisements, algorithmically selected, or non-search advertisements (which may also be targeted, e.g. on a demographic or geographic basis).
12. Although Google Search is the best-known general search engine, competing search engines now include Bing (owned by Microsoft) and DuckDuckGo, and there are also widely used Chinese¹ and Russian² language general search engines. As of 2007-08, the period on which this case is focused, other general search engines in the English language included Yahoo!, Microsoft’s Windows Live Search and Ask.
13. Since general search engines are free to users, they compete on quality. This covers such matters as the relevance of the results, speed, convenience, and the attractiveness of the SERP.
14. It should be noted that it is not necessary to use a general search engine to access a particular website. Users navigate the World Wide Web using a software interface known as a browser (e.g. Internet Explorer, Firefox, etc). If the user knows the website he or she wants to reach, it can be accessed by entering the website name or address in the search bar of the browser, and

¹ Baidu

² Yandex

many websites in turn incorporate clickable links to other websites. An individual user's popular websites can be saved as "favourites" in their browser, for easier and quicker access.

Online maps

15. Online maps are obviously a distinct product from a general search engine. Streetmap asserted, and for the purpose of the preliminary issue I accept, that the provision of online maps is in a different market from general search engines. It is not necessary to determine the specific boundaries of the two markets, but they are clearly related, in that online maps and online map websites may be accessed through a general search engine.
16. The market for online maps largely took off in the mid-1990s, with the rapid advance in technology for digital cartographic data. A number of online mapping providers started to operate at that time. MultiMap was launched in 1995, followed in 1996 by Mapsolute's Map24 and MapQuest. As mentioned above, Streetmap started its online service in 1997. A supplier of an online map needs either to own the cartographic data or to license it from a third party. Global licensing companies included NAVTEQ and TeleAtlas.
17. Streetmap concentrated on maps in Great Britain and licensed data initially from Bartholomew, providing maps for urban areas in the format used in Bartholomew's "A-Z" paper publications. Ms Bamborough in her evidence said that this proved popular since users were familiar with that style of map. Since 2000, Streetmap licensed also Ordnance Survey's mapping data and so provided coverage of rural areas as well, and thereafter had full coverage for Great Britain.
18. Although a digital map like a paper map provides a cartographic representation of a particular area, it is different in that the displayed map on the user's screen presents only a small proportion of the data contained in the database from which it is derived. Therefore digital maps consist of a visible portion and a vastly larger, hidden portion. Users search for the map they want by various forms of query. Possible queries include: the name of a town or district, street name, postcode, telephone code, or latitude and longitude. I shall refer to queries of this kind as "geographic queries". Some mapping providers can process location queries such as "British Museum" or "Royal Courts of Justice", or the name of a particular hotel, restaurant or business, identifying the location on the displayed map. Some providers also respond to natural language queries of a more generalised nature: e.g. "cafés in Holborn" or "Indian restaurants in Birmingham". I shall refer to the former as "specific location queries" and the latter as "general location queries".
19. The ability of online mapping providers to deal with queries has developed substantially over the past 15 years. So has additional functionality, such as showing where the user is (referred to as "geo-location") and indicating a suggested route to a chosen destination. The substantial and continuing evolution of online mapping reflects the rapid development of computing power and significant investment by the companies involved. Some providers

display a simplified “base map”, onto which further information sought by the user (e.g. points of interest or traffic conditions) can then be superimposed.

20. Google Maps was launched in the US in about February 2005, using an alternative satellite and aerial imagery base layer in a simple style. It was launched in the UK around April 2005, and until late 2011 licensed UK mapping data from TeleAtlas. Since then, it has used its own mapping data (while continuing to license related data, such as satellite imagery, from third parties).
21. There are various ways in which a user can access online maps. Typing a geographic query in a general search engine will bring up hyperlinks on the SERP that will often include online mapping providers, and to a certain extent the same is true for location queries. The user can also type the name of a chosen mapping provider, such as Streetmap, as a search query which will then lead to a link to the particular provider’s home page, in which a geographic or location query can then be entered. A search of that kind, which has the intention of finding a particular website or webpage, is known as a “navigational query.” But it is not necessary to go through a general search engine: if the user knows the website address of the provider (known as the “URL” or uniform resource locator), that can be typed into the address bar of the browser to go direct to the provider’s home page; and the URL can be saved as a “favourite” for quicker access thereafter. Moreover, from about 2005, programmable toolkits known as maps APIs³ became widely available to website owners, which enabled a clickable map to be embedded in a website. As businesses, institutions, public amenities and so forth established their own websites, they increasingly took advantage of this technology: many entered into an agreement with an online mapping provider for a clickable link to such a map, with a pointer to their location or locations.
22. Online maps are provided to the general public free of charge and the providers generate their revenue in various ways. Banner advertising may be displayed adjacent to the map, and this can be either general or location specific. Streetmap also derived significant revenue from licensing its maps for embedding in third party websites. Google Maps has made a free version of its maps available for such third party use, but it also makes available a premium (paid-for) version and has developed ways of monetizing location queries for commercial enterprises (i.e. as opposed to simple geographic queries searching for an address).
23. Competition between online maps is based only in part on their cartographic style and appearance, as different users have different preferences. The providers have sought to develop their ability to recognise and process different kinds of search query (e.g. postcode, telephone code, incorrect spellings, etc.) The information displayed also varies as between different providers (e.g. some maps show speed limits, one-way streets, etc). But the functionality of the user interface is also very important. In 2004, so-called “slippy map” technology was introduced, such that instead of the user moving the map displayed on screen by clicking on control arrows to the side, the map

³ API stands for Application Programming Interface.

can be dragged in response to movement of the mouse (and more recently, touch screen movements). Similarly, smooth zooming in and out of the display may be achieved through controls on the mouse. Google Maps incorporated slippy maps technology from its launch in 2005. Multimaps launched its slippy maps in May 2007, and Streetmap finally introduced slippy maps in December 2008. I should add that after the period with which this case is concerned, the development of effective smartphone applications became an important aspect of competing technology.

24. It is common ground that in 2007-08, the major competing online mapping providers for Great Britain were Google Maps, MultiMap and Streetmap, although there were other providers in the market. MultiMap was acquired by Microsoft in 2007 (and subsequently closed down in 2010 in favour of Microsoft's Bing Maps). It is notable that a number of other independent online mapping portals have been acquired by much larger, more diverse businesses. Among the US providers, MapQuest, was acquired by AOL in 2000 and continues to run as part of AOL Time Warner; and in 2007 the German company, Mapsolute, which operated Map24, was acquired by NAVTEQ, which in turn was acquired by Nokia later that year.⁴

The Google Maps OneBox

25. In order to explain Streetmap's allegations and then determine the question of abuse, it is necessary to explain the development of Google's SERP in response to a geographic or location query. In that regard, the evidence was that Google's strategy is developed on a global basis, although it may be implemented incrementally, starting with its service in the US.
26. In its early years, the Google SERP displayed only a ranked list of blue links to third party web pages, with a short snippet of text from the relevant page. But Google then decided that it would be helpful to users to present also some specific types of information directly as a response to the query in a specialised format, which it called a "OneBox". Thus Google developed OneBoxes for news, share results, currency, etc. Google first displayed a Maps OneBox in the UK in around September 2004. This was a simple affair, setting out the address and short-cut links to two mapping providers: ViaMichelin and Map24. As noted above, Google Maps was launched in the UK in April 2005, and the Maps OneBox was then revised to include, as the first short-cut, a link to Google Maps. This Maps OneBox did not contain a thumbnail map and the links were static, i.e. they were independent of the Google algorithms, and they remained the same until the new-style Maps OneBox was introduced.
27. Neither side was able to produce in evidence an example of this old-style Maps OneBox from the UK, but an example from the US is set out below:

⁴ Map24 was shut down in 2011, to be replaced by Nokia's Maps service.



Web [Images](#) [Groups](#) [News](#) [Froogle](#)

1600 amphitheatre parkway. 94043

Web

[Map of 1600 Amphitheatre Parkway, 94043](#)



[Google Maps](#) - [Yahoo! Maps](#) - [MapQuest](#)

Clicking on either the underlined address or on the “Google Maps” link took the user through to the relevant map on Google Maps.

28. As can be seen, for the old-style Maps OneBox in the US, the two other online maps included by way of short-cut links were Yahoo! Maps and MapQuest. For UK queries, as mentioned above, the alternatives were Via Michelin and Map24. The choice of those two online maps for the UK is somewhat surprising, since by 2006 at the latest, and probably before, both MultiMap and Streetmap were far more popular British online mapping providers than either Via Michelin or Map24. Google’s witness, Mr Menzel (see para 46 below), could not explain how that selection had been made, which preceded his involvement. But Streetmap did not suggest that this had put it at a disadvantage.
29. In January 2007, Google launched the new-style Maps OneBox in the US. From about 7 June 2007, Google removed the links to Via Michelin and Map24 from the old-style Maps OneBox in the UK, and about a week later it introduced the new-style Maps OneBox in the UK and in 16 other countries. This included for the first time a clickable thumbnail map, initially with the address as a further hyperlink displayed to its right. The thumbnail was an extract from Google Maps, and clicking on it took the user directly to the relevant Google Maps page. A corresponding example of the new-style Maps OneBox from the US is set out below:

The screenshot shows a Google search result for the address "1600 Amphitheatre Parkway, Mountain View, CA, 94043". At the top, the Google logo is on the left, and navigation links for "Web", "Images", "Video", "News", "Maps", and "more" are on the right. Below the logo is a search bar containing the address and a "Search" button. To the right of the search bar are links for "Advanced Search" and "Preferences".

The main content area is titled "Web" and shows "Results 1 - 10 of about 84,500 for 1600 Amphitheatre Parkway,". The first result is a map thumbnail on the left showing a street view of the location. To the right of the map is a blue underlined link: "1600 Amphitheatre Pky, Mountain View, CA, 94043 maps.google.com". Below this link is the text "Get directions to this address" and a form with a "Start address" label, an input field, and a "Go" button.

At the bottom of the page, there is a section for "Google Corporate Information: Address" with the following text: "1600 Amphitheatre Parkway Mountain View, CA 94043 phone: 650-253-0000 fax: 650-253-0001 driving directions. New York Sales & Engineering Office ... www.google.com/corporate/address.html - 19k - Sep 11, 2006 - Cached - Similar pages".

Subsequently (and the date of this was not made clear in the evidence), the dimensions of the thumbnail map were enlarged so that it spread across the page. That is the style which continues today.

30. It is admitted in Google's defence that the new-style Maps OneBox was always displayed as the first result until June 2010; thereafter it would be demoted to second position when the top blue link result was considered an authoritative page, but it always appeared as one of the first two results. Google's evidence at trial was slightly different, to the effect that if analysis of the search request gave lower confidence that the user wanted a map then only a smaller thumb-nail map would appear a few links below the top. However, for practical purposes I do not think this makes any difference to this case: Streetmap's allegations concern the situation where Google's search algorithms determined with high confidence that the user wanted a map and might therefore bring up a blue link to Streetmap. As I understand it, that would result in display of the new-style Maps OneBox at the top of the SERP (or after June 2010, as one of the first two results).
31. The other hyperlinks brought up in response to the search query would be displayed below, including where appropriate, a blue link to Streetmap that would take the user to the map found on its website. The introduction of the new-style Maps OneBox did not change the algorithmic ranking and display of those blue links. But of course it had the effect, increased when the size of the thumbnail map was itself increased, of pushing those blue links lower down the page.
32. On first introduction in June 2007, display of the new-style Maps OneBox was provided only for geographic queries for cities and neighbourhoods. The geocoding necessary to generate display on the SERP of a thumbnail map for street-address queries came soon afterwards. Google is now unable to ascertain precisely when this was achieved, but it was certainly in place by February 2008 and very possibly several months before.
33. In mid-July 2007, Google introduced in the UK a further development in what it calls its "Local Universal" search results. This encompasses both forms of location query: a specific location query, where the user seeks an individual business or entity (e.g. a named restaurant or hospital); and a general location query, where the user is seeking a category of business or entity (e.g. "Indian restaurants in Birmingham"). In either case, the SERP would display a thumbnail map on which the location(s) were marked with an indicator.
34. I should refer for completeness, and to avoid confusion, to two other developments:

- i) In April 2007, Google inserted a link to “Maps” on its home page: i.e. the page of the general search engine on which the user types a query. This was (and is) not a search result and clicking on it takes the user through to the Google Maps website, on which a search query can then be inserted. The inclusion of that link is not relevant to the present case.
- ii) In May 2012, Google introduced what it calls a “Knowledge Panel”, a feature which continues today. If the user makes a specific location query (e.g. “British Museum” or “Royal Courts of Justice”), the SERP displays at the top right a panel giving selected information about this subject-matter, generally including a small, clickable thumbnail map and a photographic image. This development came long after the conduct with which this case is concerned and it is not in any event alleged to constitute an abuse.

THE CLAIM

Summary

35. In summary, Streetmap contends that by the visual display at or near the very top of its SERP of a clickable image from Google Maps, and no other map, in response to certain geographic queries, and the consequent relegation of a blue link to Streetmap to lower down the page, Google was abusing its dominant position in the market for online search and online search advertising. Accordingly, Google is alleged to be in breach of the Chapter II prohibition under UK competition law and the equivalent provision of EU competition law set out in Article 102 of the Treaty on the Functioning of the European Union (“TFEU”).

The legislative framework

36. Section 18 of the Competition Act 1998 (“the 1998 Act”) provides, insofar as material:
 - “(1) ..., any conduct on the part of one or more undertakings which amounts to the abuse of a dominant position in a market is prohibited if it may affect trade within in the United Kingdom.
 - (2) Conduct may, in particular, constitute such an abuse if it consists in –
 - (a) directly or indirectly imposing unfair purchase or selling prices or other unfair trading conditions;
 - (b) limiting production, markets or technical development to the prejudice of consumers;

(c) applying dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage;

(d) making the conclusion of contracts subject to acceptance by the other parties of supplementary obligations which, by their nature or according to commercial usage, have no connection with the subject of the contracts.

(3) In this section –

“dominant position” means a dominant position within the United Kingdom; and “the United Kingdom” means the United Kingdom or any part of it.

(4) The prohibition imposed by subsection (1) is referred to in this Act as “the Chapter II prohibition.”

37. This provision mirrors Article 102 TFEU, save that the prohibition under EU law requires that there is an effect on trade between EU Member States. If there is a breach of the Chapter II prohibition, which Google denies, then it is admitted that there would be an effect on inter-State trade for the purpose of Article 102.
38. Moreover, section 60 of the 1998 Act sets out the “consistency principle”, whereby in deciding any question relating to the application of the Chapter II prohibition the court must act consistently with the principles laid down by the European Court in the application of EU competition law, and must have regard to any relevant decision or statement of the EU Commission (“the Commission”).
39. Accordingly, neither side suggested that it is necessary to distinguish between UK and EU competition law for the purpose of this case. I shall refer simply to abuse of a dominant position as encompassing both.
40. For a defendant to infringe the prohibition of abuse of a dominant position it must:
 - i) hold a dominant position in a relevant market;
 - ii) by its conduct abuse that position; and
 - iii) be unable to show that such conduct is objectively justified.

The burden of establishing the first two elements is on the claimant; for the third, it rests on the defendant.

Dominance

41. As mentioned above, Streetmap alleges that Google is dominant in the market for online search. More precisely, it alleges that the relevant market is the provision of general internet search results to users of the World Wide Web in the UK. Streetmap cites independent data showing that Google held a very high share of internet searches in the UK in the relevant period: over 75% in 2006-2007, rising to over 85% in 2008-2009.
42. In its defence, Google denies that it is dominant. Google disputes the definition of online search as a relevant market and, in any event, contends that these figures are not a meaningful indication of market power. However, by a consent order made on 28 July 2014, it was directed that the allegations raised by Streetmap of abuse should be tried as a preliminary issue, “[o]n the assumption that Google holds a dominant position as alleged.” This appeared a sensible course, since if the abuse allegations failed, that would be an end of the matter; whereas if they succeeded, the question of dominance could be determined at a subsequent trial which may well involve extensive disclosure but which might in any event be dependent on separate proceedings against Google being pursued by the Commission.
43. Accordingly, the question of abuse is to be determined on the basis (denied by Google) that Google is dominant in the market for general online search. I should add that it is not suggested that Google, through Google Maps, was dominant in the separate market (however defined) for online maps.

The trial

44. As a result of Streetmap significantly narrowing the allegations of abuse, the trial was much shorter than originally anticipated and, through sensible cooperation between both sides, it was efficiently conducted. Streetmap was represented by Mr Mark Hoskins QC and Mr David Bailey. Google was represented by Mr Jon Turner QC, Mr Josh Holmes and Mr Ben Lask.
45. Each side called just one factual witness. Streetmap called Ms Bamborough, who was extensively cross-examined for almost a day. She had established Streetmap on her own in 1996, and was understandably proud of the business which she had been instrumental in developing and which had acquired a strong and impressive reputation by 2005. She was an honest witness, but I found her to be very defensive and unwilling to accept that the subsequent decline of the Streetmap business that culminated in its liquidation in May 2009 could be due to anything other than the alleged abuses by Google, or that there might have been any deficiencies in the Streetmap product - at least until rather later once Streetmap was resuscitated, when she acknowledged that it lacked sufficient investment.
46. Google called Mr Jack Menzel, who made no less than five witness statements, some of them responding to the reports by some of the experts instructed on behalf of Streetmap. Mr Menzel has worked for Google at its California head offices since 2006 and is currently a Director of Project Management. He took over responsibility for the Maps OneBox in about July 2007 and so was not involved in its introduction. Like Ms Bamborough, Mr

Menzel was manifestly an honest witness, and I found him to be very frank in his evidence, notwithstanding his evident enthusiasm for what Google does.

47. Each side called one economic expert and the court used a so-called “hot-tub” for the joint presentation and scrutiny of those experts’ oral evidence. I believe that is the first time this has been done in a competition case in the UK, and it led to a constructive exchange which considerably shortened the time taken by the economic evidence at trial. However, I should mention that this process involves considerable preparation by the court and effectively requires (as in the present case) a transcript since the judge is unable to keep a proper note while leading the questioning. The two expert economists were Mr Craig Lonie for Streetmap and Mr Patrick Smith for Google. Each is a partner in a leading economic consultancy and has frequently been involved in giving economic evidence in competition cases. Both have undoubted expertise in this field, but I found that each displayed a tendency to become an advocate for the party by which he was instructed. Much of their respective reports was concerned with presenting various different measurements of searches for online maps or online mapping websites, and analysing the results. The fundamental economic issues in the present case are not particularly complex, and on those the hot-tub process led to a significant measure of agreement that was helpful, although the two experts remained very divided on their interpretation of some of the data they presented.

48. Streetmap called two other experts:

- i) Professor Dirk Lewandowski is professor of information research and information retrieval at the Hamburg University of Applied Sciences. His expertise is in web information retrieval, user behaviour in web search and the impact of web search on knowledge acquisition. His evidence was primarily directed to the effect on internet users of the presentation of a thumbnail map in the new-style Maps OneBox, and he also considered the effect of some of the suggested alternatives involving a thumbnail map from one or more third parties. Prof Lewandowski has been retained as an expert by German publishers in connection with their complaint against Google made to the Commission. Google suggested that he was at fault for not declaring this in his expert reports but, although he might appropriately have done so, it had been mentioned in a case management conference in the present case and was known to Google, so I do not criticise him on that account. Prof Lewandowski based his opinions on various research studies, but he recognised that all such studies have their limitations. As an academic, he understandably placed most reliance on more scientific studies published in peer-reviewed journals. I found him a generally helpful witness.
- ii) Dr Wolfgang Emmerich holds the Chair in distributed computing at the Department of Computer Science at University College London. He also helped to establish the Zuhike Group, which provides software engineering and development services, and is the CEO of the English company in the group. He clearly has great expertise in software engineering techniques for distributed systems, of which a search

engine is an example. His evidence was directed at the ways in which Google might have incorporated third party thumbnail maps, or a choice of maps, in its Maps OneBox, but he also considered the software enhancements required to incorporate additional functionality (such as slippy maps) in an online mapping product. His written evidence occasionally strayed into comments on the potential foreclosure effect of what Google did, which fell outside his expertise. Dr Emmerich's proposed solutions were subject to criticism by Mr Menzel in his witness statements and Dr Emmerich accepted under cross-examination that some of his answers to those criticisms in his responsive reports were overplayed. Nonetheless, his evidence was helpful in exploring the possible alternative ways of presenting hyperlinked thumbnail maps from more than one mapping provider on the SERP.

49. Google called one other expert, Mr Gary Gale, who has over 25 years' commercial experience in the field of digital maps. From 2006-2010 he worked for Yahoo Inc., in connection with their various geotechnology products and development. His more recent positions have included consultant to Ordnance Survey for their digital products group, and since July 2015 he has been Chief Technology Officer for a start-up company that provides global location and addressing services. Mr Gale's evidence surveyed the evolution and features of online mapping. Most of that evidence was not controversial and I found it of great assistance. He also commented on the implications of some of Streetmap's suggested alternatives for the Google Maps OneBox: on that, I found he was somewhat adversarial and he was not prepared to accept that there could be any benefit at all to users in being presented with a choice of extracts from two alternative maps.

ABUSE

The allegations

50. It is appropriate to set out the specific allegations of abuse, as summarised in the Re-Amended Particulars of Claim at para 80. Streetmap alleges that Google abused its dominant position in the online search and/or online search advertising markets:

“(a) by bundling Google Search with Google Maps, thereby depriving users of an undistorted choice of online mapping services; giving Google Maps an unfair advantage over Streetmap and/or producing discriminatory effects; and

(b) by displaying a thumbnail map obtained from Google Maps at or near the top of search results pages whilst displaying results relating to other providers of online mapping services by way of blue links and/or lower down the rankings.”

51. Although framed in the first alternative as an allegation of bundling (and leaving aside as irrelevant the fact that the user does not pay for access to either the Google search results or Google Maps), this is clearly not a case of bundling or tying in the traditional sense set out in section 18(2)(d) of the 1998 Act (corresponding to Article 102(d) TFEU). The user who sees the new-style Maps OneBox is under no obligation to click on it or to use Google Maps. He or she remains free, without penalty, to use any other online mapping provider or none at all.
52. Counsel for Streetmap referred extensively in their skeleton argument and opening to the *Microsoft* case, Case T-201/04 *Microsoft v Commission*, EU:T:2007:289, which they submitted was closely analogous to the present case. There, the Court of First Instance (as it then was) (“CFI”) upheld the decision of the Commission that Microsoft had abused its dominant position on the market for client PC operating systems (i.e. for general purpose computers) by tying the Windows Media Player with the Windows client PC operating system. Microsoft offered equipment manufacturers its Windows operating system only with Media Player already installed; and in view of Microsoft’s overwhelming share of the operating systems market, this practice was found to alter the balance of competition in the distinct market for streaming media players in favour of Microsoft to the detriment of other manufacturers of such streaming media players.
53. However, in that case, although users could obtain a competing streaming media player by downloading it through the internet, that was regarded as complicated by a significant number of users as compared to the simplicity of using the pre-installed Microsoft product. By contrast, although Google Maps is the only online map to benefit from a visible thumbnail, the Google SERP does include clickable links to other relevant online maps; and there is no particular difficulty for a user to click on those blue links.
54. It will be necessary to analyse some aspects of the *Microsoft* decision further, but in the present case the parties’ respective economic experts agreed that the factual complaint here should not really be analysed in terms of bundling or tying. Instead, I think Streetmap’s contention is appropriately characterised as an allegation of discrimination. The discrimination does not concern price or terms of supply, as in the usual kind of discrimination case. But the essence of discrimination in competition law is treating like products (or customers) in an unlike way. Google’s display of a clickable thumbnail map on its SERP exclusively from Google Maps, at the prime position at the top of the page, involves a form of presentation of its online mapping product that is not given to other online maps; and this preference is alleged to place those competing online maps at a competitive disadvantage unrelated to their intrinsic merits.
55. Moreover, by the time of the trial, Streetmap had made clear that it was not contending that Google should not have displayed a clickable thumbnail map on its SERP in response to a geographic query. Provision of such a map was clearly of benefit to users and competition law is intended to further the interests of consumers not to hinder them. Streetmap’s contention at the outset of the trial was that the displayed thumbnail map should not be exclusively or invariably drawn from Google Maps: either several alternative

thumbnail maps should be displayed, or the user should be given the ability to choose which map should be displayed. The techniques suggested by which this might be achieved are discussed below, together with the objections to them put forward by Google. It was in the light of those objections that at the conclusion of the trial, Streetmap urged an alternative: viz. that Google could have avoided the alleged abuse by including in the new-style Maps OneBox, underneath the thumbnail Google Map, shortcut links to Streetmap and MultiMap in similar fashion to the shortcut links to alternative mapping providers included in the old-style Maps OneBox prior to June 2007: see paras 27-28 above.

56. Both sides quoted and relied on the classic statement of the characteristics of abuse of dominance set out by the European Court of Justice (“ECJ”) in Case 85/76 *Hoffmann-La Roche v Commission*, EU:C:1979:36, at para 91:

“The concept of abuse is an objective concept relating to the behaviour of an undertaking in a dominant position which is such as to influence the structure of a market where, as a result of the very presence of the undertaking in question, the degree of competition is weakened and which, through recourse to methods different from those which condition normal competition in products or services on the basis of the transactions of commercial operators, has the effect of hindering the maintenance of the degree of competition still existing in the market or the growth of that competition.”

57. Further, in another oft-quoted statement, the ECJ declared in Case 332/81 *Michelin v Commission*, EU:C:1983:313 at para 57, in response to the argument that Michelin was being penalised for the quality of its products and services, that:

“... irrespective of the reasons for which it has such a dominant position, the undertaking concerned has a special responsibility not to allow its conduct to impair genuine undistorted competition on the common market.”

58. It is well-established that the categories of abuse enumerated in Article 102 are not exhaustive: e.g. Case C-52/09 *TeliaSonera Sverige*, EU:C:2011:83, para 26. As Mann J observed in *Purple Parking Ltd v Heathrow Airport Ltd* [2011] EWHC 987 (Ch) at [79], there is no need to try to pigeon-hole an allegation of abuse into a particular category:

“The statutory examples, and those developed by subsequent case-law, are ways in which the basic wrong can be committed, but at all times an eye must be kept on the basic wrong itself.”

59. It is also well-established that a dominant undertaking may commit an abuse where the anti-competitive effect is not on the market where it is dominant but on a separate, associated market, and Google does not suggest the contrary. In particular, the abuse may involve the use of the undertaking's power on the dominated market to leverage its position in the associated market: see the *Microsoft* case generally (and as summarised in that judgment at para 1344).
60. I see no reason, as a matter of principle, why the preferential promotion by a dominant company, by means of its power on the market where it is dominant, of its separate product on a distinct market where it is not dominant, may not constitute an abuse if that has the effect of strengthening its position on that other market and is not otherwise objectively justified. To give an example raised with the economic experts, if a supermarket was dominant in a discrete market for supermarket grocery retailing but also produced its own-label brands of tea, sugar and biscuits which competed with those of third party manufacturers, it could be an abuse if the supermarket reserved the preferential display positions for its own brands, notwithstanding that customers who wanted other brands could still find them elsewhere in the store. Google's expert fairly added the qualification that this would only be an abuse if such display was in reality an important means of attracting customers; but subject to that, I think he agreed that this could amount to an anti-competitive abuse of significant market power. The question in the present case is whether Google's conduct in these markets, in the manner complained about, constitutes conduct of this kind having a foreclosing effect on competitors, when properly analysed.
61. To answer that question requires careful consideration of the evidence, in its context. As the European Courts have frequently stated, to determine whether conduct constitutes an abuse, it is necessary to consider all the relevant circumstances of the individual case: see e.g. Case C-549/10P *Tomra Systems v Commission*, EU:C:2012:221, para 18.

Foreclosure

62. The essence of Streetmap's claim is that Google's conduct had the potential or actual effect of foreclosing competitors of Google Maps in the market for on-line maps. A dominant firm is of course able, and indeed should be encouraged, to compete, and successful competition on its part is likely to harm and may ultimately exclude competitors. Accordingly, for there to be an abuse, what has to be established is that there is *anti-competitive* foreclosure.
63. This may be defined, in a formulation on which both economic experts in this case agreed, as follows: the dominant firm uses its market power to limit effective competitors' ability to compete by depriving or hindering their necessary access to inputs or customers. Therefore the impairment of competitors does not result from competition on the merits. But "input" is to be viewed broadly, and in the present case, the relevant input is the promotion afforded by display on the Google SERP; or put another way, display on the Google SERP is a form of access to customers.

64. Furthermore, the object of competition law is to prevent harm to the structure of competition on the market, so that to find an infringement it is not necessary to establish direct harm to consumers. As the ECJ stated in Cases C-501/06P etc. *GlaxoSmithKline v Commission*, EU:C:2009:610, regarding what was then Article 81 of the EC Treaty (now Article 101 TFEU) but in terms that were expressly of wider application (at para 63):

“... like other competition rules laid down in the Treaty, art.81 EC aims to protect not only the interests of competitors or of consumers, but also the structure of the market and, in so doing, competition as such.”

65. This was reflected in the reasoning of the CFI in *Microsoft*, dismissing the appeal against the Commission’s decision finding abuse by foreclosure of competition to Microsoft’s Windows Media Player, at para 1089:

“The Commission therefore had ground to state ... that there was a reasonable likelihood that tying Windows and Windows Media Player would lead to a lessening of competition so that the maintenance of an effective competition structure would not be ensured in the foreseeable future. It must be made clear that the Commission did not state that the tying would lead to the elimination of all competition on the market for streaming media players. Microsoft’s argument that, several years after the beginning of the abuse at issue, a number of third-party media players are still present on the market therefore does not invalidate the Commission’s argument.”

Intention

66. Although abuse is an objective concept, it is common ground that intention may be taken into account in determining abuse. If a dominant company intended by its action to foreclose competition, that may be very relevant to the assessment, albeit that such a finding is not necessary: see e.g. *Tomra Systems v Commission*, paras 19-20. Whilst Streetmap asserted that Google’s conduct was abusive in any event, it sought to establish that the new-style Maps OneBox was motivated by an anti-competitive strategy.
67. In that regard, Mr Hoskins focused on certain internal Google documents from 2006-2007. It seems clear, and Mr Hoskins accepted, that the internal discussions which led ultimately to the new-style Maps OneBox began with consideration of how to enhance Google Search, i.e. the results displayed in response to a search query. In particular, there was focus on how to improve the results for “local” queries, which were expected to increase significantly. By this, Google was thinking primarily of what I have termed location searches (both specific and general, and in response to which the Google SERP displayed a “OneBox” which at the time did not include a thumbnail map). In around March 2006, the Google team working on the project agreed

to include the Maps OneBox in the initiative, and in the summer of 2006 an engineering team worked on developing a new-style Maps OneBox.

68. Mr Hoskins argued that the project thus spawned an effort to develop a Maps OneBox that would serve to increase usage of Google Maps. He relied in particular on the “Maps OneBox Product Plan”, produced initially on 30 July 2006, which was updated over time.
69. In the form it took as from 3 August 2006, the first section of the Product Plan read as follows:

“Background

The current incarnation of the maps onebox suffers from a number of issues:

1. It provides a link to a map, instead of rendering a map in the onebox.
2. Its triggering heuristics are in need of dramatic improvement. The most mortifying example of this phenomenon is that the query “2 dead guys in LA” triggers the maps onebox for Los Angeles, CA.
3. We are not yet able to geo-code addresses internationally.

The maps onebox project intends to remedy the above situation by accomplishing the following goals:

1. Render a static map for the maps onebox (currently, only the local navigation onebox serves a map, but the map onebox does not)⁵.
2. Refine the heuristics currently used to trigger the maps onebox.
3. Be able to locate addresses on a map for international queries (e.g. 10 Downing Street, London)....

An improved maps onebox is expected to drive more traffic to the Google Maps property.”

70. As regards the first of the identified issues, the plan proposed the following as the new “Use Case”:

“A user enters a query that will trigger the maps onebox. A static map will be rendered, along with a link to the query. Clicking on the link will take the user to

⁵ The ‘local navigation onebox’ was a OneBox which had been introduced in the US in July 2006. It displayed the location of a single business entity using a pin on a Google Map.

the maps property showing the location on the full-blown maps interface.”

71. This is of course a description of what was subsequently created as the new-style Maps OneBox. As regards the second issue, concerning inaccurate triggering of the Maps OneBox (i.e. when the user is not in fact seeking a map), the Plan explains that for the new version Google will for the first time use a geocoding “backend” infrastructure that will have the effect of filtering out locations that cannot be geocoded (i.e. are not susceptible to determination of geographic coordinates).

72. The Plan defines the project’s “Success Metrics” as follows:

“Clicks

- CTR better than the old onebox
- Whole-page CTR flat or better”

73. This was explained by Mr Menzel:

“... (i) the Click Through Rate (“CTR”) for the new-style Maps OneBox itself should be higher than the old-style Maps OneBox; and (ii) the CTR of the whole results page (i.e., the sum of the clicks to both the blue links and the OneBox) should remain flat or increase. CTR was used as a measure for the utility of the result because user engagement with a result can mean that it is useful: like seeing whether a user is interested in a book in a library by checking whether the user actually picked up that book and looked at it.”

74. In early December 2006, the Google team working on this project conducted pre-launch testing of the new-style Maps OneBox. This included a so-called “live experiment”. That involved implementing the new-style Maps OneBox for US addresses only on a small percentage of actual search traffic and comparing the impact of the change, assessed according to the above success metrics, as against the old-style Maps OneBox which was retained for the bulk of search traffic. The results were set out in an “Eval[uation] Report”, dated 11 December 2006. Since this is relevant not only to the issue of intent but also strongly relied on by both sides on the issue of effect, it is necessary to describe it in some detail.

75. The Eval Report began by repeating the “Background” section of the Product Plan. The report summarises the methodology and sets out the results of the live experiment. It was conducted in the US over the four days 1-4 December on English language searches. For that base, 1% constituted the test control group that had access to the new-style Maps OneBox. Within that control group, it was found that 0.4% of searches triggered the Maps OneBox. The report notes that this was 70% of the proportion of searches that triggered the old-style Maps OneBox: i.e. 0.56% of searches would trigger the old-style

Maps OneBox. The reduced rate of triggering reflects the improved heuristics: the report states: “The queries that trigger with the old map onebox but not the new one are invalid addresses.”

76. The results were set out in terms of the CTR for (a) the Maps OneBox and (b) the blue links on the SERP (“Web CTR”):

	Query frequency	OneBox CTR	Web CTR
Test <i>[new-style Maps OneBox]</i>	27,150	35.6 %	29.7 %
Base <i>[old-style Maps OneBox]</i>	4,231,325	32.8 %	29.3 %
<i>[Statistically]</i> Significant Difference?		Yes	No

77. These results show that users preferred the new-style Maps OneBox to the old-style Maps OneBox. While the new-style Maps OneBox was triggered in a smaller proportion of cases, when it was displayed the CTR was almost 3 percentage points higher in absolute terms, which was regarded as a statistically significant increase. However, there was no significant difference in the propensity of users to click on the blue links which appeared below the Maps OneBox. The Eval Report concluded that this was a positive result.
78. Not long afterwards, the project received approval and the new-style Maps OneBox was rolled out in the US in January 2007.
79. Mr Hoskins submitted that the Product Plan, when considered with the Eval Report, shows that Google had the intention of using the new-style Maps OneBox to boost Google Maps at the expense of competing providers. He did not suggest that this was Google’s only intention in making this change, but argued that it was one of its deliberate purposes. I reject that submission. I accept that Google considered that the change in its Maps OneBox would drive more traffic to Google Maps: that is expressly recognised in the Product Plan as quoted above, in a statement repeated in the Eval Report. But when viewed overall, I find that the whole thrust of Google’s initiative was to improve its general search engine.
80. The basic concern of the project was to remedy perceived deficiencies or disadvantages in the way that Google Search responded to geographic queries. In that regard, I think it is significant that some of Google’s main competitors at the time in general search were already displaying thumbnail maps on their

SERP in response to such queries in the US. Yahoo did so from November 2005 when users searched for a geographic location in the US. Ask began presenting maps in its results page in about March 2006.

81. Mr Hoskins pointed out that there was no evidence that Google's competitors were doing so for UK addresses by June 2007. But in my view that is irrelevant. Google is a global operation and its strategy in developing its search engine is conceived on a global basis. Having successfully launched the new-style Maps OneBox in the US in January 2007, it would have been extraordinary if Google had not sought to introduce that development in other areas of its operation as the necessary geocoding data became available. As Mr Gale said in his evidence:

“Displaying a map on the SERP was a logical development for search engines, not only because it increased user convenience (one less option to select), but because: (i) search engines needed to take account of geospatial data in responding effectively to queries and in targeting ads anyway; and (ii) displaying a map provides the user with an instantly understandable result.”

82. As for the statement that the “improved maps onebox is expected to drive more traffic to the Google Maps property”, Mr Menzel said in his first witness statement: “This was an expected consequence, not a goal of the project.” Although Mr Menzel could not give evidence of Google's thinking at the time since he was not then involved, and this is therefore only his interpretation of the document, in my judgment that interpretation is correct.
83. I should add that aside from the question of intent, the fact that some of Google's competitors were displaying thumbnail maps on their SERPs is not in itself a defence to the allegation of abuse. It is implicit in the “special responsibility” imposed on a dominant company that it may be unable to do what its non-dominant competitors can do: see *Microsoft* at para 1096.

Effect

84. As I have just explained, I have concluded that introduction of the new-style Maps OneBox was intended to improve Google's offering in the market for general search. And it is indisputable that the display of a thumbnail map on the SERP in response to a geographic query indeed enhances the quality of the Google SERP. The unusual and challenging feature of this case is that conduct which was pro-competitive in the market in which the undertaking is dominant is alleged to be abusive on the grounds of an alleged anti-competitive effect in a distinct market in which it is not dominant. That is why much of the argument focused on alternative ways in which Google might have made this pro-competitive improvement without allegedly distorting competition in online maps. But before considering those alternatives, it is necessary to determine whether such an anti-competitive effect in the online maps market is established to the requisite standard.

85. Two questions arise regarding the test to be applied:
- i) Does Streetmap have to establish an actual anti-competitive effect or is a potential effect sufficient?
 - ii) Does the effect have to be appreciable?

Actual or potential effect?

86. In 1999, the Commission adopted a decision finding that British Airways (“BA”) had abused a dominant position in the UK market for the purchase of travel agency services by certain types of fidelity rebates in its agreements with travel agents, which had a foreclosing effect on other airlines. This conduct was found to have been carried out from at least 1992 to the time of the decision: see OJ 2000 L30/1, at para 122. On appeal, BA argued that the Commission had merely presumed that those rebates had an exclusionary effect, without any empirical evidence that it in fact had an adverse effect on competitors, customers or consumers. Dismissing that argument, the CFI stated:

“for the purposes of establishing an infringement of Article 82 EC, it is not necessary to demonstrate that the abuse in question had a concrete effect on the markets concerned. It is sufficient in that respect to demonstrate that the abusive conduct of the undertaking in a dominant position tends to restrict competition, or, in other words, that the conduct is capable of having, or likely to have, such an effect.” Case T-219/99 *British Airways v Commission*, EU:T:2003:343, para 293.

The CFI observed that the Commission had nonetheless demonstrated such an effect on the evidence.

87. On the further appeal to the ECJ, this point did not specifically arise and so was not addressed in the judgment, but in her Opinion Kokott AG stated:

“70. Significantly, BA itself states that it is not necessary in each case to establish actual anti-competitive effects of a rebate or bonus scheme on competitors. The burden on competition authorities, courts, and, in some cases, private complainants, in even attempting to establish it would in many cases be entirely disproportionate.

71. What is to be proved is, rather, the mere *likelihood* of the conduct in question hindering the maintenance or development of competition still existing in the market by means other than competition on the merits, thereby prejudicing the goal of effective and undistorted competition in the common market. With regard, therefore, to rebates and bonuses of a dominant

undertaking, it has to be proved that they are *capable* of making it difficult or impossible for that undertaking's competitors to have access to the market and its business partners to choose between various sources of supply." Case C-95/04P. EU:C:2006:133

The Advocate General went on to observe that in determining this question, all the circumstances of the individual case must be assessed.

88. Streetmap does not suggest that a mere possibility of anti-competitive foreclosure would suffice. The impugned conduct must be reasonably likely to harm the competitive structure of the market. That is the formulation adopted by the CFI in *Microsoft*: see at para 65 above. I accept Streetmap's submission that, on the authorities, this is the applicable test.
89. However, it is notable that in many cases, the Commission considers the experience over the years since the abuse started. That is particularly the case when the conduct does not constitute one of the classic forms of abuse where such an effect may be presumed: e.g. predatory pricing. Thus in *Microsoft* itself, the Commission examined the effect on the media player market of the tying of Windows Media Player. As the CFI stated, at para 868:

"...the Commission considered that in light of the specific circumstances of the present case, it could not merely assume, as it normally does in cases of abusive tying, that the tying of a specific product and a dominant product has by its nature a foreclosure effect. The Commission therefore examined more closely the actual effects which the bundling had already had on the streaming media player market and also the way in which that market was likely to evolve."

90. Moreover, if it were found that the impugned conduct had no anti-competitive effect, it seems to me that would be very relevant. I note that in the *British Airways* case, the CFI stated (at para 297):

"... where an undertaking in a dominant position actually puts into operation a practice generating the effect of ousting its competitors, the fact that the hoped-for result is not achieved is not sufficient to prevent a finding of abuse of a dominant position within the meaning of Article 82 EC."

But that observation was *obiter* and, in any event, would appear to relate to a situation where the dominant undertaking is specifically seeking to oust its competitors, i.e. the conduct has a specifically anti-competitive object. It is certainly the case that conduct may still constitute an abuse when it does not have the full effect anticipated if it nonetheless harms competition. In a case such as the present, I would find it difficult in practical terms to reconcile a finding that conduct had no anti-competitive effect at all with a conclusion that it was nonetheless reasonably likely to have such an effect. The point is of

some importance, since it was Google's contention that the introduction of the new-style Maps OneBox had no effect on competition in the online mapping market. The appropriate approach, it seems to me, is that it is for Streetmap to establish that the conduct was reasonably likely to harm competition. In determining that question, the court will take into account, as a very relevant consideration, evidence as to what the actual effect of the conduct has been.

91. A further question concerns the possible change in circumstances over time. Streetmap seeks a declaration that Google's conduct as commenced in June 2007 constitutes an abuse, effectively on the basis that this abuse has continued until today. That therefore involves a period of eight years. It is clear as a matter of principle that conduct which might infringe Article 102 when started might no longer constitute an infringement several years later: e.g. if the undertaking involved no longer held a dominant position. Mr Hoskins submitted that the correct approach here was to assess the situation when the conduct commenced (i.e. in mid-2007) and that if it was an abuse at that time, it would be for Google to show that at some later stage the conduct ceased to be an abuse. I am not convinced that is correct, since the burden of establishing abuse, subject only to the question of objective justification, rests on Streetmap. However, as a practical matter, I accept that there is an evidential burden on Google to put forward a case that there was a material change in circumstances which fundamentally altered the situation over the period involved. It would be unreasonable and disproportionate to expect a claimant in every case to put forward evidence of effect on the market each year over a potentially prolonged period. However, the issue does not arise in the present case since Google did not seek to draw a distinction between the situation that prevailed in the second half of 2007 and at some later date.

What degree of effect is required?

92. Streetmap submitted that there is no *de minimis* principle applicable to abuse of dominance. The skeleton argument of Mr Hoskins and Mr Bailey stated: "there is no need to show that the likely anti-competitive effect is of a serious or appreciable nature."
93. In support of that proposition, Streetmap referred to a series of pronouncements by the European Courts. In *Hoffmann-La Roche*, the ECJ stated, at para 123:

"... since the course of conduct under consideration is that of an undertaking occupying a dominant position on a market where for this reason the structure of competition has already been weakened, within the field of application of Article [102] any further weakening of the structure of competition may constitute an abuse of a dominant position."
94. This passage was relied on by the ECJ in Case C-23/14 *Post Danmark II*, EU:C:2015:651, where the position was set out more fully:

“70 As regards ... the serious or appreciable nature of an anti-competitive effect, although it is true that a finding that an undertaking has a dominant position is not in itself a ground of criticism of the undertaking concerned ..., the conduct of such an undertaking may give rise to an abuse of its dominant position because the structure of competition on the market has already been weakened

...

72 ..., since the structure of competition on the market has already been weakened by the presence of the dominant undertaking, any further weakening of the structure of competition may constitute an abuse of a dominant position (judgment in *Hoffmann-La Roche v Commission*, 85/76, EU:C:1979:36, paragraph 123)

73 It follows that fixing an appreciability (*de minimis*) threshold for the purposes of determining whether there is an abuse of a dominant position is not justified. That anti-competitive practice is, by its very nature, liable to give rise to not insignificant restrictions of competition, or even of eliminating competition on the market on which the undertaking concerned operates.

74 It follows from the foregoing considerations that Article [102] must be interpreted as meaning that, in order to fall within the scope of that article, the anti-competitive effect of a rebate scheme operated by a dominant undertaking must be probable, there being no need to show that it is of a serious or appreciable nature.”

95. Both *Hoffmann-La Roche* and *Post Danmark II* concerned rebate schemes operated by the dominant undertaking, where the potential anti-competitive effect was on the market where it was dominant. The same consideration applies to the loyalty scheme condemned in Case T-286/09 *Intel v Commission*, EU:T:2014:547, where the General Court expressed itself in similar terms (see at para 116). That feature underlies the reasoning of the European Courts in this regard, with their express reference to an effect on the market where competition is already weakened by the presence of the dominant undertaking.
96. In my view, it does not follow that conduct will constitute an abuse where the effect is on a separate market where the undertaking is not dominant, if that effect is not serious or appreciable. On the contrary, it must always be borne in mind that the purpose of competition law is to prevent arrangements or practices which distort competition and to safeguard the interests of consumers. That applies no less to Article 102 than to Article 101: see the observations of Jacobs AG in Case C-7/97 *Bronner v Mediaprint*,

EU:C:1998:264, at para 58. And in the jurisprudence under Article 101, it is well-established that an agreement or arrangement will not be prohibited unless it may have an appreciable effect. That is logical, since for Article 101 to be engaged there is no requirement of dominance.

97. Accordingly, I do not regard the pronouncements of the ECJ to which I have referred as precluding me from holding that where the likely effect relied on is on a non-dominated market, a *de minimis* threshold applies and that to constitute an abuse the effect must therefore be appreciable. I note that such a conclusion has the support of some leading commentators: see Whish & Bailey, *Competition Law* (8th edn, 2015), p. 212; Faull & Nikpay, *The EU Law of Competition* (3rd edn, 2014), para 4.929.
98. It is axiomatic, as I remarked earlier, that competition by a dominant company is to be encouraged. Where – as here – its conduct is pro-competitive on the market where it is dominant, it would to my mind be perverse to find that it contravenes competition law because it may have a *non-appreciable* effect on a related market where competition is not otherwise weakened. Accordingly, I consider that in the circumstances of the present case a *de minimis* threshold applies. For Google’s conduct at issue to constitute an abuse, it must be reasonably likely to have a serious or appreciable effect in the market for on-line maps.

Was the new-style Maps OneBox reasonably likely appreciably to affect competition?

99. This is a factual assessment, which I have found the most difficult part of this case. I remind myself that the issue is to be determined on the basis of the evidence before the Court, not on instinct or personal experience.
100. In addressing the effect of particular conduct, it is necessary to have in mind the alternative position against which that effect falls to be assessed: i.e. what is usually referred to as the counterfactual. Both sides’ economic experts approached this on the basis that the relevant counterfactual is the situation which prevailed before the new-style Maps OneBox was introduced. That was the old-style Maps OneBox, which did not contain any thumbnail map: see para 27 above. There was no suggestion by Streetmap that this old-style Maps OneBox gave rise to an abuse.
101. There are some limitations in this approach, since Streetmap did not suggest that Google should have retained that old-style Maps OneBox but rather submitted that the abuse comprised the way in which the new-style Maps OneBox was designed and implemented such that it automatically and exclusively contained a thumbnail map from Google Maps. Even on this issue, Streetmap’s stance was modified in the course of the trial, as I shall explain below. But given that Streetmap was putting forward various alternative forms of Maps OneBox which it suggested that Google could have adopted, it might be that such alternatives constitute the relevant counterfactual. However, since obviously each of those alternatives remains hypothetical, I can appreciate that the counterfactual adopted was perhaps the

only practical way to proceed. Nonetheless, the consequence of this approach needs to be recognised.

102. For Google, it was argued that the introduction of the new-style Maps OneBox in June 2007 did not have any effect on competition in online maps (and therefore was not reasonably likely to have any effect). I do not accept that submission. The Maps OneBox was in prime position at the top of the Google SERP. Moreover, the inclusion of a thumbnail map meant that the various blue links were inevitably pushed lower down the page. Mr Menzel accepted that users display positional bias in their response to the SERP. He said in his oral evidence:

“A. there is – presentation bias, absolutely, like the higher you put something on the page.

Q. And specifically what he [i.e. Professor Lewandowski] says, users tend to click on results at or near the top, and second statement, users tend to focus and click on results above the fold, you are agree with both of those?

A. I agree with him.

Q. You go on to explain why is that. Is that right? Is that correct?

A. It is correct, that there is presentation bias and the higher you put something on the page there is an effect on that.

Q. The specific statements, not just general presentation bias, the specific statements users tend to focus and click on results above the fold.

A. That is correct.”

103. Furthermore, the inclusion of a thumbnail map, on which the user could directly click-through to Google Maps, was self-evidently an eye-catching feature, by contrast with the form of blue link by which competing online maps were presented.
104. I regard it as very relevant that Google itself, with all its experience in this field, stated in its planning for the new-style Maps OneBox that it expected that this would drive more traffic to Google Maps. That statement was repeated in Google’s evaluation report of the “live experiment”, and it was not disavowed by Mr Menzel in his evidence. Indeed, in many ways this may be regarded as common sense.
105. Google sought to rebut the suggestion that this could distort competition in online maps on the basis that the “presentation bias” merely reflected the confidence which consumers had in Google: they trusted Google to place the

most relevant result at the top because, in summary, Google Search does such a good and careful job in ranking the answers it provides to a search query. However, I regard that argument as misconceived. In the first place, the ranking of web links on its SERP is achieved through Google's application of its algorithms. But those algorithms are not applied to the Maps OneBox at all: it appears at the top (or after 2010, in one of the first two places) above the algorithmic ranking of other mapping websites. There was no evidence as to where a link to Google Maps would have been placed if subjected to the ranking algorithms along with competing online maps. Secondly, this argument is self-serving. Because Google Search generally does a good job, that in itself cannot entitle Google to give the most prominent visual display to its own related products. Different users have different preferences for particular styles of map, and users obviously seek maps for various different purposes. What Prof Lewandowski termed the "trust bias" which Google has built up derives from the quality of its general search engine: it has nothing to do with any inherent superiority of Google Maps over other online maps. The very fact that Google Search may have built up such confidence in its users only increases the effect which the positioning of the link to a related product may have in the related product market.

106. Although not necessary to my finding on this point, I should add that it is appropriate also to have regard to the extent of Google's assumed dominance. This is not a case where an undertaking only just crosses the dominance threshold. Google is alleged to have held a very high degree of market power in the market for general search, and the preliminary issue is being tried on the basis that this allegation is correct. This does not involve imposing any special burden on "super-dominant" undertakings; it is simply to recognise that when an undertaking has a very high market share, its conduct is more likely to have an effect. See *Post Danmark II*, paras 39 and 43-46.
107. However, the question whether the effect was likely to be *appreciable* requires much closer analysis. A variety of data and metrics were put forward on the issue of effect, to which much of the economists' evidence was devoted.
108. In their closing submissions, Counsel for Streetmap placed particular reliance on the "live experiment" conducted by Google in the US before the new-style Maps OneBox was launched. As Mr Hoskins rightly emphasised, this was a comparative test conducted on actual traffic, and the only data which focused specifically on the impact on users of the new-style Maps OneBox. He described it as accordingly "the most crucial bit of evidence in the case."
109. The results of the live experiment are set out at para 76 above. Although the proportion of users clicking on the new-style compared to the old-style Maps OneBox was found to increase by a statistically significant amount (35.6% up from 32.8%), it is important to note also that part of the change introduced by Google was to restrict the triggering of a Maps OneBox in the first place. This was achieved by enhanced analysis of the user's query so as to avoid display of the OneBox when the user was not seeking an actual address or location:

what Mr Menzel in his evidence referred to as a “wrong answer”.⁶ In consequence, the new-style Maps OneBox was displayed in response to 0.4% of queries, which was 70% of the proportion of queries that triggered the old-style Maps OneBox.

110. Mr Hoskins pointed to the fact that when the new-style Maps OneBox was displayed, which indicates that the user was making a geographic query, a notably higher proportion clicked on the Google thumbnail map (35.6%) than on any of the blue links below (29.7%). He submitted, and I accept, that this difference is significant. However, in my view, it does not carry the implications which Mr Hoskins sought to place upon it. There are a variety of reasons why users might prefer a Google map to any of the alternative online maps referenced by the blue links. It is notable that under the old-style Maps OneBox in the US, which offered short-cut links alongside Google Maps to Yahoo! Maps and MapQuest, both prominent providers of online maps on the US market at the time, very many more users clicked on Google Maps: the other two combined accounted for only 10% of the CTR from that OneBox. Thus the relative viewing following introduction of the new-style Maps OneBox, measured by the CTR to Google Maps compared to the CTR to a proxy for other maps (determined by CTR to the blue links), does not indicate that this is the result of the new-style Maps OneBox.
111. In that regard, I think it is more meaningful to consider the comparison between the situation with the new-style and the old-style Maps OneBox, not the comparison between the Maps OneBox and the blue links. With the old-style Maps OneBox, the CTR to Google Maps was 29.5% (i.e. 32.8% less the 10% of that share accounted for by Yahoo! Maps and MapQuest). But the new-style Maps OneBox was triggered for only 70% of the queries that would have triggered the old. Adapting the illustration provided in his oral evidence by Mr Smith (to account for the CTR to Yahoo! Maps and MapQuest), it follows that if the old-style Maps OneBox was triggered 1000 times, the CTR to Google Maps was 29.5%. That is 295 clicks. The new-style Maps OneBox was only triggered 70% as often, so that is 700 triggers, and the CTR was 35.6%. So that is 249 clicks. Accordingly, in this experiment the rate of clicks to Google Maps, in respect of the same number of queries, did not increase with the new-style Maps OneBox compared to the old.
112. Put another way, for every 1000 queries that triggered the old-style Maps OneBox, it would appear that only 70% were in response to users who made a query of a geographic nature (e.g. for a city or an address). The “improved heuristics” involved in the development of the new-style Maps OneBox narrowed the occasions when it was triggered to that 70% proportion. Accordingly, the 295 clicks through to Google Maps from the old style Maps OneBox would be expected to come from that 70% share, i.e. 700 queries. The CTR to Google Maps on those queries was accordingly 42.1%, which is higher than the CTR to Google Maps on the equivalent 700 queries that trigger the new-style Maps OneBox. The explanation for this was not explored in evidence but I do not find it surprising, since some users would get the

⁶ E.g., displaying a thumbnail map of Los Angeles in response to the search query, “2 dead guys in LA”.

information they wanted from the thumbnail map presented in the new-style Maps OneBox and so would not need to click through to a full-size map. That accords with what the Product Plan had identified as one of the deficiencies with the old-style Maps OneBox: it had provided only a link to a map instead of rendering a map in the OneBox itself.

113. Moreover, the result of the experiment recorded in the Eval Report indicated that the CTR to the blue links did not significantly change as between a SERP with a new-style Maps OneBox (29.7%) compared to the old (29.3%). Google argued that this established that introduction of the new-style Maps OneBox did not cannibalise demand from the other online maps shown as blue links. However, the position seems to me rather more complicated. With the old-style Maps OneBox, clicks to either Yahoo! Maps or MapQuest could come through a short-cut link in the Maps OneBox itself whereas with the new-style Maps OneBox those alternatives were available only by way of a blue link. The implications of that were not explored in the trial but by a supplementary submission received in response to a draft of this judgment, Streetmap sought to argue that to get a fairer comparison, for the old-style Maps OneBox there should be added to the 29.3% CTR a further 3.3% on account of the CTR to Yahoo! Maps and MapQuest. That produces a total CTR to websites other than Google Maps of 32.6%. On this basis, Streetmap submitted that there was a significant adverse effect on third parties.
114. It is obviously unsatisfactory that this was not put by way of cross-examination of the economist giving evidence for Google who sought to analyse these figures. I think it is probably correct to make this adjustment, which then indicates that there was a decline in the CTR to third party websites in cases where the new-style Maps OneBox was generated compared to the old-style. But I do not think this is of assistance, since those third party websites comprise *all* websites, not simply online mapping sites. Given that the old-style Maps OneBox was generated in a very significant proportion of cases where the user was not interested in a map (see above), one would expect in that situation that there would be a significantly higher proportion of clicks through to other websites that were more relevant to the user's query. The pertinent question is: what was the effect on the CTR to Yahoo! Maps and MapQuest, or indeed to all third party online mapping websites? But as to that, the live experiment did not provide any information.
115. In short, the live experiment was designed to test whether with the new-style Maps OneBox the triggering of a Maps OneBox was more responsive to users' search interest. I have read Streetmap's supplementary submission (to which Google had no opportunity to respond), but I do not see that the figures for the CTR to other websites generally provide a basis for inferring an effect on the CTR to online mapping websites in particular. It follows that, on proper analysis, I do not find that the live experiment supports the argument that the new-style Maps OneBox had an appreciable effect in diverting users away from other online maps.
116. The live experiment concerned the US. I turn to the position in the UK. The evidence of Mr Gale was that the market for online maps in the UK significantly and steadily increased over the period 2000-2010: he said that

the increase overall would plot at a 45 degree gradient. In such a growing market, if the usage of Google Maps increased and that of competing products remained static, it follows that Google Maps was capturing a major share of that growth, including therefore new users of online maps. The main providers competing with Google Maps in 2007 were Streetmap and MultiMap. But the fact that Google Maps gained market share compared to Streetmap and MultiMap does not in itself indicate, let alone establish, that the new-style Maps OneBox was the cause, or even a contributory cause. Any relative success of Google Maps is equally explicable on the basis of features of Google Maps that attracted users: i.e., competition on the merits.

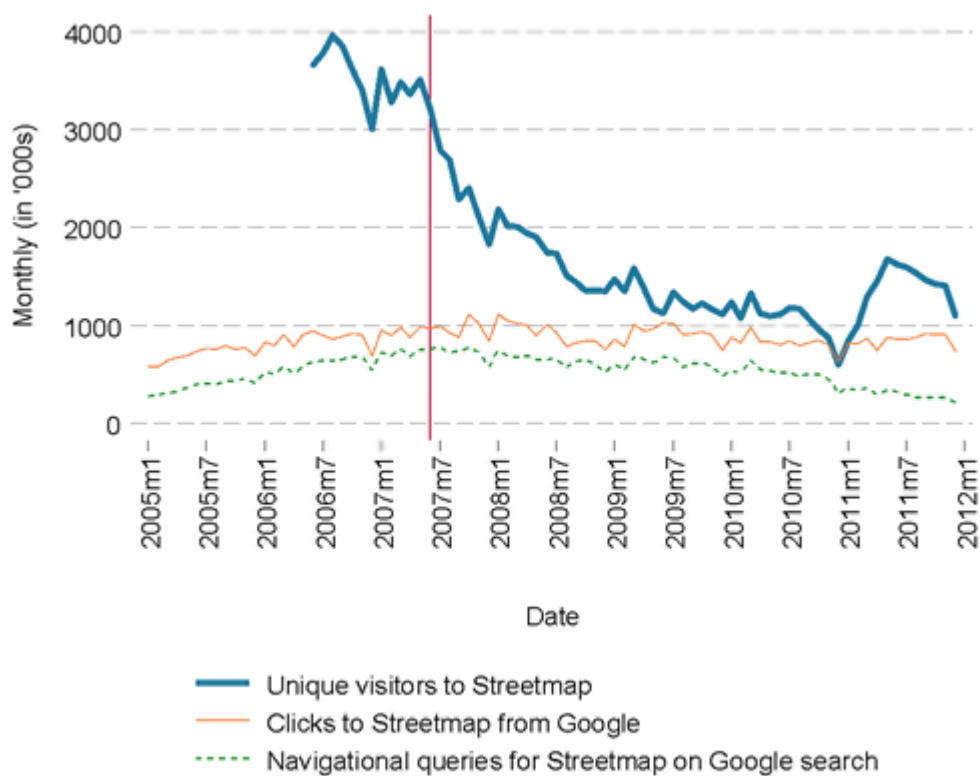
117. From the time of its launch, Google Maps had slippy maps, which subsequently became standard in the industry. By July 2005, Google Maps had introduced a hybrid mode, allowing users to view a location in both map and photographic form at the same time. Google Maps was an early pioneer in using vector data that enabled its maps to present the same style at different zoom levels, whereas with other providers the visualisation of the map changed at different zoom levels. Irrelevant banner advertising adjacent to the online map can be an irritant to users but is regarded as more user-friendly when the advertisements relate to the location of either the user or the search. By about October 2005, Google had developed the ability to serve such geo-targeted advertisements. And from the point of view of overall usability and functionality of the online mapping portal, from at least July 2006 in the UK, Google Maps permitted so-called 'natural language' searching: i.e. the user can simply type a request such as "where is the British Museum" without entering a street name or postcode.
118. There was significant evidence suggesting that Streetmap was deficient or lagging behind as regards many of these functional developments. For example, Streetmap failed to provide slippy maps until December 2008 and it has never enabled natural language searching. Streetmap did not recognise an abbreviation of "Street" to "St", nor could it process the house numbers in an address. But the economists agreed that if the new-style Maps OneBox had a foreclosure effect, that would be evident as much for MultiMap as for Streetmap, so it is relevant to look also at the position of the other main UK online mapping provider. MultiMap introduced slippy maps on 31 May 2007, but this was still much later than Google. MultiMap never offered natural language searching (although its successor, Bing Maps, incorporated such a function from its launch in June 2009). Mr Gale exhibited a detailed, refereed academic study, "Usability Evaluation of Web Mapping Sites", (2008) *The Cartographic Journal*, 45, 129-138, which was based on experimental assessments carried out in August-September 2006. The four web mapping sites assessed did not include Streetmap but included MultiMap and Google Maps. Although the evaluation identified benefits and drawbacks in each site, it is notable that Google Maps was found to have the smallest number of catastrophic or major usability problems, and far fewer (22) than MultiMap (47). Among the criticisms of MultiMap compared to Google were the overloading of the page with advertisements and the confusing change in visualisation between different zoom levels.

119. This case is not a quality contest as between Google Maps and Streetmap and I have no doubt that there were (and no doubt remain) aspects of Streetmap which some users prefer to Google Maps. As Ms Bamborough observed, there is no “one size fits all” in the presentation of maps. Streetmap could point to certain functions which it developed early, such as its mobile mapping service “Pocket Streetmap” although that had to be discontinued on grounds of expense in late 2005. Nonetheless, it seems clear to me that while Streetmap may have been an innovative pioneer in online mapping which led to its early success, by the beginning of 2007 Google Maps was significantly more advanced in developing functionality as regards such matters as pan, zoom and search, and it presented its own distinctive user interface. The relative success of Google Maps in the UK in 2007-2008 is therefore readily explicable by a range of factors involving competition on the merits and wholly unrelated to the introduction of the new-style Maps OneBox on the Google SERP. This has to be borne in mind when considering the various comparative data presented by the economists and, indeed, by Ms Bamborough herself.
120. Streetmap referred to the data for “unique visitors” collected by comScore which, as I understand it, is generally used in the industry. Indeed, a graph plotting the sharp decline in the comScore figures for unique visitors in the UK to Streetmap from mid-2007 is appended to Streetmap’s Particulars of Claim as encapsulating the effect on which it relies.
121. “Unique visitor” data reports the number of persons who have accessed a particular online provider’s website in a given month. If the same person were to access a site twice in a month, that visitor would be counted only once. Accordingly, the number of visitors almost certainly underestimates (and may significantly underestimate) the total number of visits. The data is an estimate based on a sample of some 20,000 people.⁷ A table setting out the comScore data for the period June 2006-August 2007 as regards Google Maps, MultiMap and Streetmap is at Appendix 1.
122. Those figures indeed show a decline in unique visitors to Streetmap in the months after June 2007, but they do not show a similar downward turn in unique visitors to MultiMap. And they demonstrate that the upward trajectory in visitors to Google Maps started well before June 2007 and displays no stark change at that point. By April 2007, Google Maps had become the most popular online mapping provider in the UK. It is striking that the unique visitor numbers for Google Maps grew from 4.6 million to 8.1 million over the year June 2006-May 2007, an increase that virtually corresponds to the total number of unique visitors to Streetmap. Although Ms Bamborough suggested in her evidence that the technical features incorporated in Google Maps had not affected the Streetmap visitor numbers in any significant way prior to the introduction of the new-style Maps OneBox, that ignores the overall expansion in the market and the growth in visitor numbers for Google Maps relative to Streetmap.
123. Moreover, in response to navigational queries in Google Search for either MultiMap or Streetmap, the Google SERP ranks MultiMap or Streetmap,

⁷ That was the position up to 2011, when the methodology employed by comScore was enhanced.

respectively, as the first of the displayed results and does not generate a Maps OneBox or any thumbnail map. Mr Smith presented graphical analyses of monthly data obtained from Google alongside the comScore unique visitor data. These show the total number of clicks from a Google search result to Streetmap and MultiMap, respectively, as compared to the number of navigational queries in Google Search for particular search terms related to Streetmap,⁸ and MultiMap.⁹ The total clicks to Streetmap and MultiMap include those who reached the particular mapping provider using such a navigational query and those who reached it by a non-navigational query (e.g. “Oxford Street, London”). The two graphs, plotting this data alongside the comScore figures for “monthly unique visitors”, are set out as Figures 1 and 2 below.

Figure 1: Monthly unique visitors to Streetmap, organic clicks to Streetmap from Google, and navigational queries for Streetmap on Google search, UK, January 2005 to December 2011



Sources: Visitor data from comScore, organic click data and navigational query data from Google.

Note: From 2011 comScore changed the way it collected data to make its figures more accurate, which explains the jump shown in unique visitors that year.

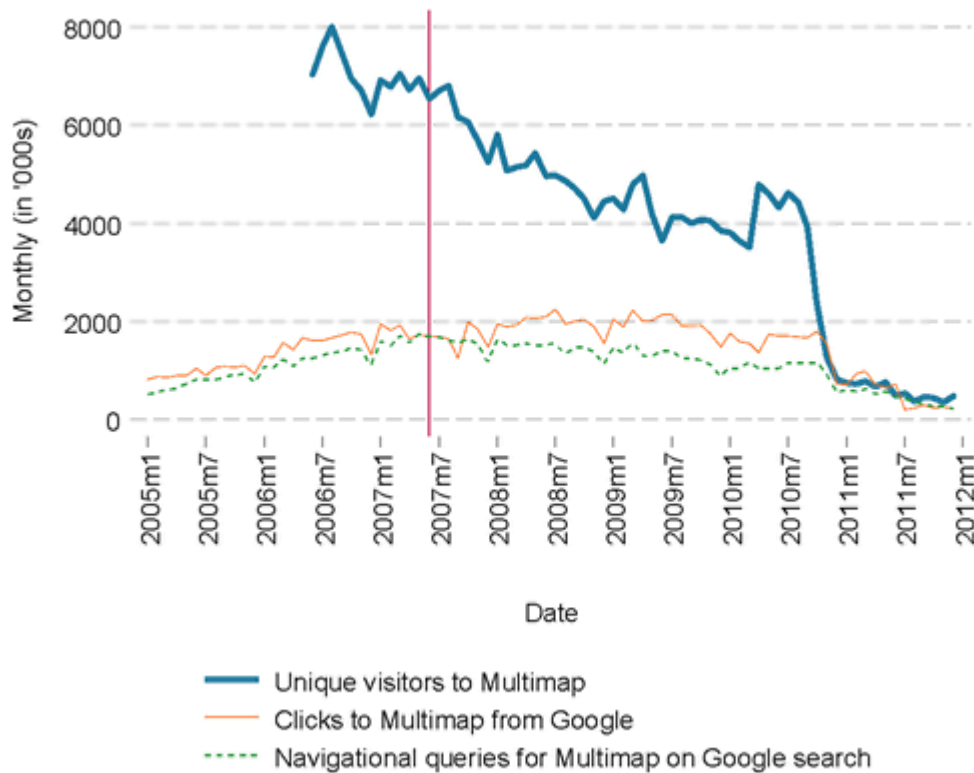
Figure 2: Monthly unique visitors to MultiMap, organic clicks to MultiMap from Google, and navigational queries for MultiMap on Google search, UK, January 2005 to December 2011

⁸ The data covers searches for “streetmap”, “street map”, “streetmap uk” and “streetmap.co.uk”.

⁹ The data covers searches for “multimap”, “multi map”, “multi-map”, “multimap uk”, “multimap.com” and “multimap.co.uk”.

Sources: Visitor data from comScore, organic click data and navigational query data from Google

Note: Microsoft acquired MultiMap in December 2007, and integrated Multimaps into Bing maps in late 2010, and from that time visits to the Multimaps website were redirected to Bing maps.



124. The vertical line in these graphs indicates June 2007, the time of the introduction of the new-style Maps OneBox. These graphs accordingly show that:

- i) The total number of navigational queries from Google for both Streetmap and MultiMap is almost as large as the total number of clicks from Google to those respective online mapping sites, both before and after the introduction of the new-style Maps OneBox. Although not all navigational queries which resulted in the display of Streetmap or MultiMap as a blue link in top position might have led to a click through to that site, it seems likely that the majority did so. Thus the majority of clicks from Google to both Streetmap and MultiMap resulted not from geographic queries but from navigational queries, which have never generated a Maps OneBox (whether old-style or new-style).
- ii) Google was not the route by which the large majority of visitors reached either MultiMap or (at least until 2011), Streetmap. For example, in January 2007, monthly unique visitors to MultiMap were

6.9 million, 3.5 times higher than clicks to MultiMap from Google of 2 million; and monthly unique visitors to Streetmap were 3.6 million, 3.8 times higher than clicks to Streetmap from Google of 951,000. Indeed, as Mr Smith points out in his expert's report, the actual difference is even greater, since the comScore data for monthly unique visitors represents a conservative lower bound on the number of distinct visits to a site over each month since multiple visits by the same user are recorded as a single visit.¹⁰

125. These analyses may at first seem surprising, and indeed they appear to have come as a surprise to Streetmap and to Mr Lonie, its economic expert. The implication of this data is that a very significant share of Streetmap's traffic, at least in the period 2006-2010, came from a combination of two other sources. First, there were users who directly entered the Streetmap website address in their browser (or clicked on the address saved as a "favourite"). Ms Bamborough testified that by 2007 Streetmap was a very well-known brand in the UK with a strong following. Secondly, there were users who clicked through to Streetmap from a third party website (e.g. a restaurant or retail outlet) which had incorporated the Streetmap API to enable consumers to find its location. A business or institution could incorporate such a link in its website to Streetmap either using Streetmap's free API (in which case the user was taken to Streetmap's general map with advertisements) or to a template version supplied for a fee, which had no advertisements. Streetmap had developed a successful business-to-business ("B2B") offering in the latter category, and its B2B clients included a wide range of well-known companies, including Safeway, Pizza Hut and the Post Office.
126. There was no corresponding evidence regarding the ways MultiMap attracted users, but I have no reason to suppose that they were materially different.
127. In the light of these analyses presented in Mr Smith's report, Streetmap contended that the decline in its unique visitor numbers reflected the effect of the new-style Maps OneBox in reducing the relative awareness of the Streetmap brand compared to Google Maps. In particular, in a significantly expanding market, new customers for online maps were no longer attracted to Streetmap, or similarly to MultiMap. This was demonstrated by the fact that the level of clicks through to Streetmap and MultiMap from Google Search remained fairly static despite the growth of the market. Furthermore, as Google Maps became relatively more popular, so businesses opted to take the Google Maps API instead of Streetmap's.
128. Because of the way the comScore data is compiled, it cannot be used to determine market shares. To develop this contention, Mr Lonie therefore sought to analyse the trends in the *relative* share of searches on Google Search that was constituted by navigational queries for Streetmap and MultiMap. For this purpose, he used Google's published "Google Trends" database, which presents trends in "search interest" by measuring the number of instances that a particular search terms is entered into Google Search relative to the total

¹⁰ By contrast, the Google data on clicks and navigational searches count each click or search separately, even if by the same user. The two sets of Google data are therefore directly comparable.

number of searches from Google Search.¹¹ Mr Lonie explained this approach in his third report:

“2.9 Given that this is based on the size of the total market for Google Search, I do not consider that it is a perfect proxy for the size of the online maps market. However, I consider that it is the most appropriate proxy that I have available to me, and is based on a reliable, verifiable data source.

2.10 Also, while imperfect, I would expect that any abrupt changes to trends in this statistic would signal a likely underpinning event, or structural change, of some kind.

3.1 If searches for online maps remained a constant share of the total Google searches, and searches for Streetmap were to remain a constant share of searches for online maps, one would expect search interest to remain flat. Therefore, I consider that an appropriate counterfactual would be for search interest to remain relatively flat from June 2007 onwards. For there to be a decline in Streetmap’s search interest, there would have to be a reduction in:

- searches for online maps as a proportion of total searches;
- searches for Streetmap as a proportion of searches for online maps;
- or a combination of these two effects.”

129. It is not in dispute that there is a significant seasonal effect in the extent to which users search for online maps. To adjust for the seasonal effects on the monthly data, Mr Lonie calculated and presented a 12-month trailing average of “search interest” in both Streetmap and MultiMap (i.e. based on the 12 months concluding with the month in question). His graphs showing the result of that analysis are reproduced as Figures 3.1 and 3.2 below.

¹¹ E.g. if the total number of searches in a month was 10,000 and the search term “Streetmap” accounted for 20 of those searches, interest in Streetmap would be recorded as 0.2%. On Google Trends the “search interest” statistics are indexed to the point in time when the search term had the highest search interest.

Figure 3.1 'Search interest' in Streetmap, Jan 2004 to Jan 2011

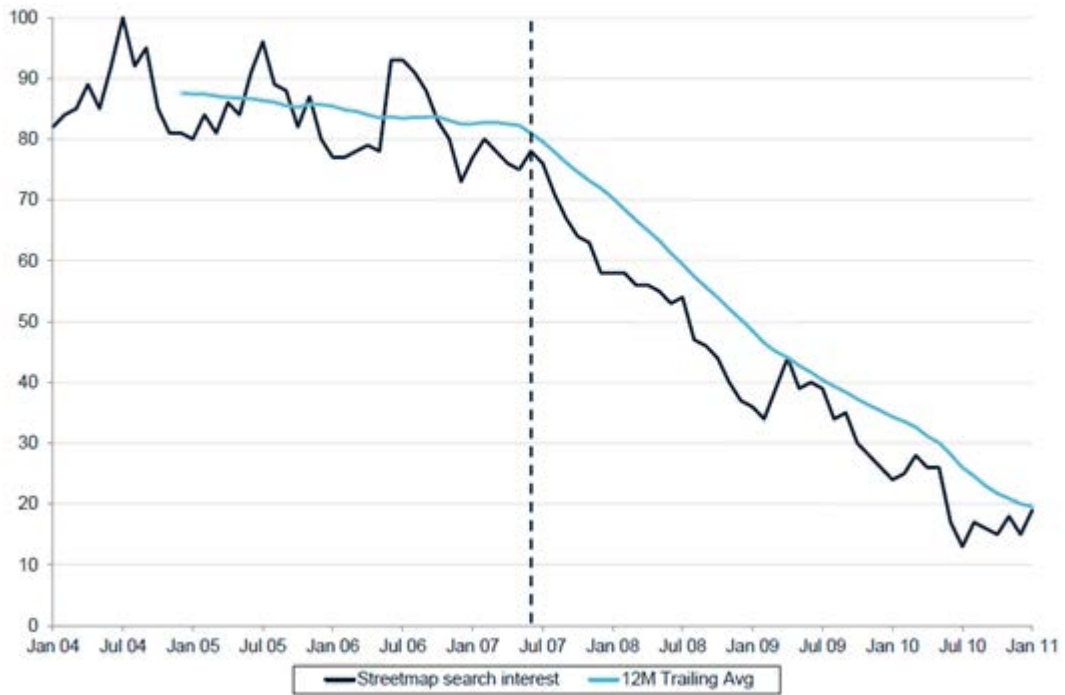
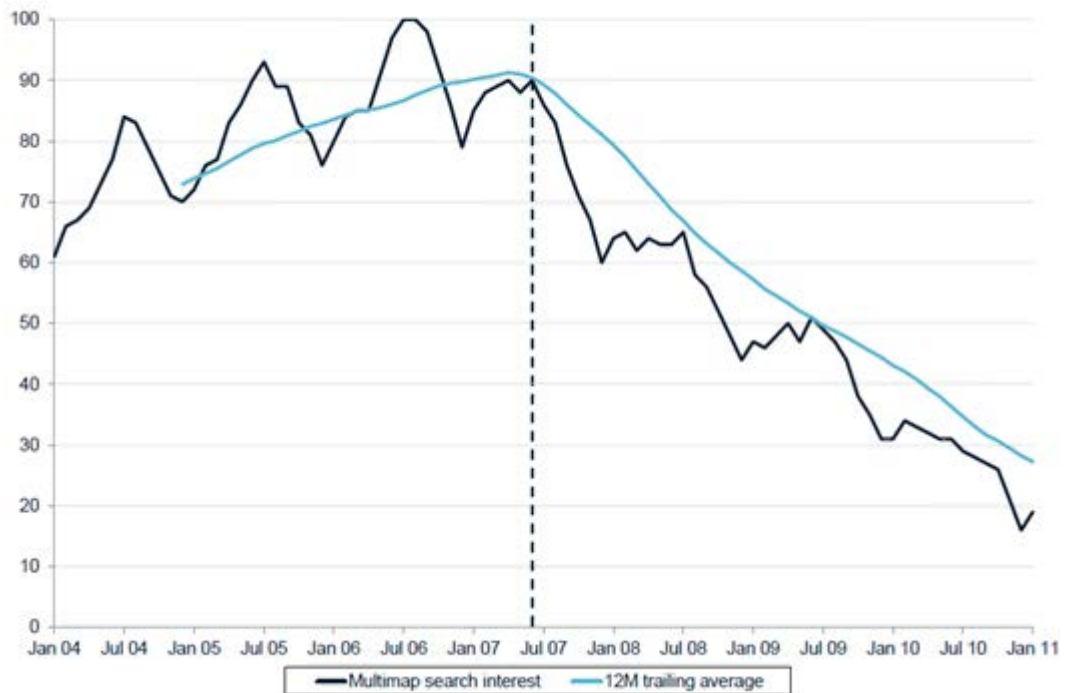


Figure 3.2 'Search interest' in Multimap, Jan 2004 to Jan 2011



130. Mr Lonie noted the sharp reduction in search interest indicated by his graphs for both Streetmap and MultiMap “immediately following the introduction of the new-style Maps OneBox in June 2007.” He said in his oral evidence that:

“...this change in interest I think is profoundly significant. It picks up this lagged effect of brand awareness that I think is potentially evident in the market. It also leads direct URL or bookmark traffic, by which I mean, the fact that people are now searching less frequently for Streetmap, for whatever reason, gives rise to a potentially lower likelihood that in time these new searchers would bookmark Streetmap or choose to go directly to Streetmap in order to source their maps.

So whilst it may not be a type of search that is specifically and directly affected by Google’s actions, the effect of Google’s actions could manifest itself very clearly in this space, and I think the evidence points again very clearly to the fact that it has done.”

131. Mr Smith in his fourth report in response was strongly critical of the use of a 12-month trailing average. He said that this distorted the picture by delaying any apparent change in trends to a later point, whereas a “more neutral” approach would be to use a 12 month rolling average spanning the month in question (i.e. based on the 6 months preceding the month in question, that month and the 5 following months). Applying that approach showed that the significant acceleration in Streetmap’s decline occurred around November-December 2006.
132. In their oral evidence in the ‘hot tub’, Mr Lonie and Mr Smith were each adamant that the other’s approach to the application of an average was incorrect.
133. I find it somewhat surprising that there should be such a sharp clash between the experts, each with a duty to assist the court, on the question of the methodology of averaging. However, on this particular issue, I consider that Mr Lonie’s approach is clearly more appropriate. The trailing average relates to the 12 months up to the date in question (“t”), i.e. from t-11 to t. The rolling average used by Mr Smith uses t-6 to t+5. Since display of the new-style Maps OneBox started in June 2007, if that had an effect on search interest then Mr Lonie’s data should begin to record this from t = June 2007 because his trailing averaging will only start to include data from June 2007 in the average calculated for that month. Mr Smith’s data on the other hand will begin to record an effect from t = January 2007 because his rolling averaging includes five months after the date in question. His figure for January 2007 will therefore already include data from June 2007. That is not an appropriate way of determining, on an annualised basis, when the impact of any change occurred.
134. The underlying figures used by Mr Lonie and Mr Smith are of course the same and so is the smoothing of monthly effects produced by a 12 months average. As Mr Lonie tellingly remarked in his oral evidence, responding to Mr Smith’s graph showing a rolling average:

“The graph you have included in Smith 4 is my graph shifted six months to the left. It is not a different graph. It is just the same data and values shifted to the left, crediting events that occurred in June 2007 to data that is recorded against January of 2007. I do not think, unless I have completely misunderstood what you have done, the graph is different. I do not think the smoothing of the line is different. I do not think the maximum is different in terms of anything. All you have done in effect is to shift the line back and paint a picture that suggests that effects that occurred in June should be viewed as having occurred in January.”

135. I have gone into this evidence in some detail because it became the high watermark of Mr Lonie’s expert evidence. But although it shows a sharp decline in *relative* searches for “Streetmap” and “MultiMap”, on Google Search, I do not consider that it supports an inference that this was likely to have been the result of the introduction of the new-style Maps OneBox. In the first place, there are serious limitations in this data. The denominator is all searches on Google. As Mr Smith emphasised, that is a vastly wider universe and if there were at any time a surge in searches on some completely unrelated topic, that would lead to a decline in the relative search interest in Streetmap and MultiMap, which would be completely unrelated to the Maps OneBox or indeed anything to do with online maps. Secondly, if it were the case that introduction of the new-style Maps OneBox reduced brand awareness of Streetmap and MultiMap, I do not see how that could have happened so abruptly. As Ms Bamborough said in her evidence, Streetmap had a strong and long-established brand as at mid-2007, so one would not expect those users making navigational queries suddenly to search for something else: an adverse effect on the brand in that respect would be felt gradually over time. It is also relevant that the absolute figures for navigational queries for Streetmap and MultiMap tabulated by Mr Smith, which covered a broader range of relevant search terms than simply “Streetmap” and “MultiMap” used for the data compiled by Mr Lonie, remained flat and did not display a sharp and sudden decline: see Figures 1 and 2 at para 123 above.
136. Accordingly, I consider that these Google Trends figures cannot be regarded as significant in addressing the question whether the introduction of the new-style Maps OneBox had an appreciable effect. I note that in their closing submissions, Counsel for Streetmap did not even refer to that analysis and described the economic evidence on effect as “ultimately inconclusive”; instead they placed reliance on the results of the “live experiment”, as discussed above.
137. Moreover, even if Mr Lonie’s figures were to be interpreted as suggesting a decline in June 2007 in navigational searches for Streetmap and MultiMap *relative to clicks through to Google Maps* (and not merely to all Google searches), that decline, and also the sharp decline in unique visitor numbers recorded by comScore, is likely to reflect other factors. In particular, in July 2007, less than five weeks after the new-style Maps OneBox was launched for

geographic searches, Google introduced its Local Universal feature in the UK for location searches: see para 33 above. Thus, a search on Google for “the British Museum” or “Indian restaurants in Birmingham” would generate on the SERP a clickable thumbnail map pinpointing the location(s). Previously, the SERP would have displayed links to relevant websites of the subject (or in some cases, the address of a location), and a distinct search would subsequently have to be made using that address to generate a map. However, Streetmap could not recognise or respond to a location search of that type, so if a user wanted to find a map on Streetmap, he or she would still have to make a two-stage search (i.e. first search for the address or postcode of the location in question, and then search for that address/postcode to find a map). I regard this as a significant factor in taking online traffic away from Streetmap.

138. Secondly, the Streetmap API that led to its map (or a link to its map) being embedded in third party websites was an important part of Streetmap’s business. Google Maps offered an equivalent API but, by contrast with Streetmap’s, it was offered free to businesses. Streetmap’s internal documents included email exchanges with a number of such business customers who indicated that they were moving to take the API from Google Maps, for reasons including cost (and the availability of slippy maps from Google was also mentioned). Ms Bamborough in her evidence said that Google’s offering of a free API made it very difficult for Streetmap to compete with them for such business customers.¹² There was no quantitative evidence as to how quickly business use of the Streetmap API declined, but I have little doubt that this played a significant part in the drop in visitors to Streetmap.
139. Although this is not an easy assessment due to the limitations in the data, I find on consideration of all the evidence that the introduction of the new-style Maps OneBox in June 2007 did not in itself have an appreciable effect in taking custom away from Streetmap. In the light of that, I conclude that it was not reasonably likely to give rise to anti-competitive foreclosure.
140. I am reinforced in that conclusion by two matters:
- i) In the US, a major online mapping provider competing with Google Maps was MapQuest, which had been one of the two other short-cut links in the US old-style Maps OneBox. An internal Google email chain from early 2009 (referred to by Streetmap for a different purpose) recorded the challenge Google had faced in competing with MapQuest and how it took to February 2009 before Google Maps overtook MapQuest in becoming the most popular US mapping site. A member of the Google team noted that in September 2007, Google Maps had 28 million unique users per month compared to MapQuest’s almost 50 million, “a gap that seemed hard to close, especially after

¹² The Paris Court of Appeal, after considering the opinion of the French competition authority, recently dismissed a claim by a French online mapping provider that the free offering of the Google Maps API constituted predatory pricing and thus an abuse of dominance: *Soc. Evermaps v Google Inc*, judgment of 25 November 2015. An equivalent allegation had been made by Streetmap in this case, but was abandoned long before the trial.

almost a year of Google Maps being flat in usage”. The new-style Maps OneBox had been introduced in the US in January 2007, and it is accordingly clear that this had not had the effect of foreclosing competition from MapQuest. The Google employees highlight various factors as contributing to the relative advance of Google Maps between September 2007 and February 2009 but no mention is made of the Maps OneBox. I appreciate that there may be some differences between the nature of usage in the US and the UK, but I nonetheless regard this analogy as significant.

- ii) To the extent that Google Search was important as a route for users of Streetmap, one would expect those running Streetmap to keep an eye on how Streetmap was treated in Google Search. Unsurprisingly, Ms Bamborough said that they noticed “almost straight away” when Google introduced the new-style Maps OneBox. But she also said that they did not immediately think that this would be a problem for Streetmap; and that when they noticed that Streetmap was suffering a serious decline in unique visitors, they did not for some considerable time regard Google’s new-style Maps OneBox as the cause of their problem. Indeed, as I understood Ms Bamborough’s evidence on this, she said that it was only when the business collapsed (i.e. in May 2009) that they concluded that the new-style Maps OneBox had been the cause of Streetmap’s decline. That no doubt explains why Streetmap did not complain in 2007, or seek to engage in discussion with Google as to what might be done to restore a level playing field for competition with Google Maps. But I think it is significant that those running Streetmap, with all their understanding of the British market for online maps, did not very rapidly regard the new-style Maps OneBox as likely to have an appreciable effect on Streetmap’s ability to compete. The fact that this was the thinking of those closely involved in this market and, indeed, most at risk, is for me a strong indication that such an effect was not reasonably likely.

141. That is sufficient to dispose of the allegation of abuse. However, in case I should be wrong in that conclusion, and as it was extensively argued, I proceed to consider the issue of objective justification.

Objective justification

142. As Mr Hoskins emphasised, the burden of establishing objective justification rests on Google. There is no objective justification “defence” in the legislation, but it has long been established that if the dominant company shows that the conduct impugned was objectively justified, that conduct will not be an abuse.
143. Although the full scope of such objective justification has not been conclusively determined, two aspects are clear:
- i) it is open to the dominant undertaking to show that any exclusionary effect on the market is counter-balanced or outweighed by advantages

that also benefit consumers: Case C-209/10 *Post Danmark*, EU:C:2012:172, para 41; and

ii) the conduct in question must be proportionate.

144. As regards the first aspect, the ECJ in *Post Danmark* added, at para 42:

“... it is for the dominant undertaking to show that the efficiency gains likely to result from the conduct under consideration counteract any likely negative effects on competition and consumer welfare in the affected markets, that those gains have been, or are likely to be, brought about as a result of that conduct, that such conduct is necessary for the achievement of those gains in efficiency and that it does not eliminate effective competition, by removing all or most existing sources of actual or potential competition.”

145. Relevant efficiencies are not confined to economic considerations in terms of price or cost but may consist of technical improvements in the quality of the goods: see e.g. the Commission’s Guidance on its enforcement priorities in applying Article [102] to abusive exclusionary conduct by dominant undertakings, OJ 2009 C45/7, at para 30. In *Microsoft*, where the CFI gave extensive consideration to the various efficiency justifications put forward by Microsoft, the Court significantly stated (at para 1159):

“... the Court notes that, as the Commission observes both in the contested decision and in its pleadings, Microsoft does not show that the integration of Windows Media Player in Windows creates technical efficiencies or, in other words, that it “lead[s] to superior technical product performance” ...”

146. As regards proportionality, the application of this principle has been stressed in the jurisprudence on abuse on many occasions. Hence the Commission Guidance, under the head of “Objective Justification”, states that the Commission “will assess whether the conduct in question is indispensable and proportionate to the goal allegedly pursued by the dominant undertaking” (para 28). And under efficiencies, one of the necessary criteria is expressed as follows:

“there must be no less anti-competitive alternatives to the conduct that are capable of producing the same efficiencies.”

147. When addressing objective justification on the facts here, I think it is important to note that the abuse alleged is not the introduction by Google of a Maps OneBox containing a thumbnail map. As I have mentioned, Streetmap realistically accepted that this was a technical improvement in Google Search for the benefit of consumers. The alleged abuse lay in the fact that this Maps OneBox offered automatically and exclusively a thumbnail map from Google

Maps. Cast in the language of objective justification, the presentation of a thumbnail map on the SERP in response to a geographic query was a technical “efficiency”.

148. On that basis, the focus of the argument on objective justification was on the proportionality requirement. Indeed, Mr Hoskins stated in his oral closing submissions that the case turns on proportionality: “Was there a less distortive alternative that could have been adopted? That is really what this case is about at the end of the day.”
149. However, the question of alternatives obviously cannot be considered only with respect to competitive impact. Proportionality is inherently a matter of fact and degree. Where the efficiency is a technical improvement, proportionality does not require adoption of an alternative that is much less efficient in terms of greatly increased cost or which imposes an unreasonable burden (at the very least in a case where there is no suggestion that the conduct impugned was likely to *eliminate* competition). In that regard, I think that the observations of the ECJ in Case C-395/87 *Ministère Public v Tournier*, EU:C:1989:319, are very relevant. That was a case alleging exploitative not exclusionary abuse, on the basis of the level of charges demanded by the French music copyright collecting society for copyright licences to operators of discothèques. Addressing the argument that the requirement of a blanket or flat-rate royalty was itself an indication of unfairness, the Court stated, at para 45:

“The fact that a flat-rate royalty is charged can only be criticized by reference to the prohibition contained in Article [102] if other methods might be capable of attaining the same legitimate aim, namely the protection of the interests of authors, composers and publishers of music, without thereby increasing the costs of managing contracts and monitoring the use of protected musical works.”

150. Streetmap put forward a number of alternative ways in which it said Google could have achieved the legitimate objective of presenting a thumbnail map on its SERP in response to a geographic inquiry. It was then for Google to show that those alternatives were impractical or failed to provide the same benefits, or would have involved significantly greater complexity or cost. But I think it is necessary to bear in mind the context of that assessment, since here Streetmap is effectively asserting that Google should have designed or developed the new-style Maps OneBox in a different way.

The “Links Alternative”

151. As regards the question of an alternative means of achieving the same efficiency or consumer benefit, the trial took a somewhat unusual turn. The trial was opened on the basis that Streetmap relied on the various alternatives put forward and discussed in the reports of Dr Emmerich, whereby a thumbnail map from one or more third party providers could have been displayed or selected. Those proposed solutions were the subject of detailed

evidence in response from Mr Menzel, and Mr Turner cross-examined Dr Emmerich in some detail regarding his various proposals. However, in the cross-examination of Mr Menzel, relatively little challenge was made to the various objections he had raised to Dr Emmerich's proposals. Instead, in their concluding submissions, Counsel for Streetmap focused on a further alternative, namely that although the new-style Maps OneBox displayed a thumbnail map from Google Maps, it could still have incorporated short-cut hyperlinks to a few third party providers, like the old-style Maps OneBox: see para 28 above. Streetmap referred to this as the "Links Alternative". In their written closing submissions, Mr Hoskins and Mr Bailey stated as regard all these various alternatives:

"... it is not necessary for the Court to consider each of these options in detail; it is sufficient to determine whether one of these options would have been a less anti-competitive alternative capable of achieving Google's objective."

On that basis, both the written and oral closing submissions for Streetmap were devoted only to the Links Alternative.

152. The Links Alternative had never been raised by Streetmap in its pleading or evidence prior to the trial. Indeed, Google suggested that it was not open to Streetmap to advance this alternative at all.
153. In the Re-Amended Particulars of Claim, the "preferential treatment of Google Maps" alleged to be abusive was set out as follows (at para 92):

"(a) By inserting a clickable image of a map from Google Maps at or near the top of the first search engine results page of Google Search. Google treats its own online mapping service more favourably than equivalent competing services.

(b) As a result of Google's more favourable treatment of its own mapping service, Streetmap has suffered a competitive disadvantage in relation to Google Maps. Rival online mapping services (like Streetmap) that may be as relevant or more relevant to a search are more difficult for a user to find, because the user has to scroll down the screen to see them or has to go to a subsequent search results web page or because they do not see a map image."

154. On consideration of Streetmap's pleaded case as a whole, I did not think it was right to preclude Streetmap from advancing the lesser allegation that Google should have included short-cut hyperlinks to alternative providers in the Maps OneBox. Put another way, it can be said that even if display of only a thumbnail Google Map in the Maps OneBox might otherwise be justified, that should have been done in a way less restrictive of competition by also incorporating these shortcut links to alternatives. The Links Alternative was put to Mr Menzel, Google's only factual witness, in cross-examination. Mr Hoskins said in his oral closing that they were simply "refining our case in the light of the evidence" given in the trial. Nonetheless, in assessing the Links

Alternative, I bear in mind that Google had not had a proper opportunity to lead evidence dealing with it.

155. In my view, the Links Alternative is not an effective or viable alternative for two principal reasons. First, although Streetmap's allegations included a complaint that third party map providers were relegated to hyperlinks lower down the page, the essential thrust of Streetmap's case was that Google was giving Google Maps an unfair advantage because of the automatic and exclusive presentation of a thumbnail map from Google Maps in the Maps OneBox. Ms Bamborough never indicated that adding a shortcut link to Streetmap below the Google Maps thumbnail would have been adequate to avoid the extremely adverse consequences which she claimed Streetmap had suffered from Google's conduct in displaying what she referred to as the "Big Map at the Top of the Page" ("BMATP"). Indeed, she stated, in her third witness statement:

"On the basis of my own experience and knowledge, it is clear that presentation of a BMATP in SERPs is likely to attract users to click on the Google map image rather than to find location information via third party sites or via other online mapping services."

156. Mr Hoskins sought to buttress the Links Alternative approach by reference to evidence of usage with the old-style Maps OneBox in the US. There, some 10% of the CTR from the Maps OneBox went to Yahoo! Maps and MapQuest. However, that was in circumstances where no thumbnail extract from Google Maps was displayed and only the words "Google Maps" appeared as an alternative link: see para 27 above. As I have just observed, Ms Bamborough emphasised that it was the prominent visual presentation of the map from Google Maps which gave Google an unfair advantage. Accordingly, I do not consider that the contention that the Links Alternative would have been effective derives any support from the very different situation which prevailed under the old-style Maps OneBox.
157. I of course recognise that the Links Alternative would obviate one consequence of the new-style Maps OneBox that is included in Streetmap's complaints: i.e. the fact that its significantly larger size due to the incorporation of a thumbnail map meant that the blue link to Streetmap was pushed lower down the page. Indeed, in that respect, the Links Alternative would put Streetmap in a better position than it had been with the old-style Maps OneBox. But given that Streetmap apparently did not feel an anti-competitive effect from the fact that it was not one of the shortcut links in the old-style Maps OneBox, I consider that if the introduction of the new-style Maps OneBox did have an appreciable effect on competition, that particular aspect was probably of little significance as compared to the exclusive and prominent presentation of a clickable thumbnail map from Google Maps.
158. Secondly, I consider that the Links Alternative would involve much greater complication for Google than may at first appear. As mentioned at para 26 above, in the old-style Maps OneBox, the short-cut links to the two or three mapping providers were static: they did not vary according to the application

any algorithm. But if the Links Alternative were to be adopted to comply with the special responsibility resting on Google as a dominant undertaking, that could not be for the specific benefit of Streetmap alone and it would have implications for Local Universal as well. Google began to display a thumbnail map on its SERP in response to a wider range of queries in the UK over several months, relying on a geocoding infrastructure. From February 2008 at the latest (see para 32 above), the queries which led to display of a clickable thumbnail map on the SERP included: (a) geographic searches by cities, neighbourhoods and addresses; (b) specific location searches (e.g. “British Museum”); and (c) general location searches (e.g. “Indian restaurants in Birmingham”). And for all of these, Google Search would be able to interpret and respond to a natural language search (e.g. “where are the Law Courts in Manchester”). Streetmap could never respond to queries in categories (b) and (c), nor could it interpret natural language queries or a search for, e.g., “22 Frith St”,¹³ and in that situation no blue link for Streetmap would appear on the SERP at all. Accordingly, if a link to Streetmap was inappropriate (because Streetmap would not display a map in response to the query which generated the thumbnail map on the Google SERP), then if another mapping provider could interpret that query to display a map, it seems to me that a short-cut link to that online map would have to be included instead. It follows that those links below the thumbnail map could not be static but would have to vary according to which third party mapping providers were identified by the algorithmic response to the search query. As the flexibility of the search functions of other online mapping providers developed, so the identity of the short-cut links displayed under the Links Alternative would need to change. That would introduce a level of complexity that seems to me not very different from the problems raised by Dr Emmerich’s proposed solution of giving the user a choice of maps, which I discuss below.¹⁴

159. Furthermore, EU competition law of course applies equally in all Member States and it is well-known that Google Search is an extremely popular search engine throughout the EU. If it is dominant as a search engine in the UK, by the same token it is very likely to be dominant in other Member States or regional markets. For each of those, Google would on this approach have to select the alternative online mapping portals which were to receive the benefit of a direct shortcut link from the Maps OneBox. Just as Streetmap’s recognition functionality was different in certain respects from that of Google Maps (so that it could not generate a map in response to some kinds of query which could be interpreted by Google Maps), so there were likely to be variations between the functionalities, and sometimes the geographic coverage, of leading providers of maps in different parts of the EU. In short, I consider that there would be major practical problems in implementing this approach in an objective and lawful manner.
160. I would add that it is unnecessary to consider whether the inclusion of the static shortcut links in the old-style Maps OneBox amounted to an abuse since this was never alleged and, as I have observed, Ms Bamborough did not

¹³ See para 118 above.

¹⁴ Since the Links Alternative was only raised by Streetmap very late in the trial, its technical aspects were not addressed specifically by Google in its evidence or explored with Dr Emmerich.

suggest that Streetmap had suffered in the period 2004-2007 when it had not been one of those links. The proposed Links Alternative is directed at the new-style Maps OneBox on the basis that it was this which had an appreciable anti-competitive effect.

161. For these reasons, in my judgment, the fact that the new-style Maps OneBox did not include short cut hyperlinks to Streetmap (and another online map) does not preclude Google from relying on objective justification or mean that the way in which it implemented the technical “efficiency” of presenting a thumbnail map on the SERP was disproportionate.

Dr Emmerich’s solutions

162. In the light of the way Streetmap ultimately put its case, it may be unnecessary to lengthen this judgment by consideration of the various alternatives put forward by Dr Emmerich and the objections raised to them by Google. However, reliance upon them was never abandoned and I think it is right that I should consider them, but I do so more briefly than if they had remained at the forefront of Streetmap’s submissions.

163. Dr Emmerich advanced three alternative solutions whereby Google could have displayed third party maps in the Maps OneBox:

- 1) Single thumbnail map and links. This involved having several alternative hyperlink choices in the Maps OneBox to different online mapping providers (Dr Emmerich suggested three choices as realistic): a click on any of these would bring up in the OneBox a thumbnail map from that provider, and the user could click on one of the alternative links to change the source of the map.
- 2) Selection by users of their preferred provider. Google Search has a “Search Settings” page where a user can change preferences for the search engine’s behaviour, e.g. as to the number of results shown per page. There could be an additional section enabling the user to choose a map provider from a number of providers of online maps. The Maps OneBox would then display a thumbnail map from that provider. Since there was more space on this page, a more extensive choice of providers could be offered than in solution (1).
- 3) Showing multiple maps. Two or three thumbnail maps, each from a different provider, could be shown adjacent to each other in the Maps OneBox.

Dr Emmerich provided sample illustrations of how the result of each of these solutions would look.

164. I can appreciate the ostensible benefits of these suggestions, although (3) has the potential disadvantage of creating clutter on the SERP, depending on the size and resolution of the user’s screen. However, for each of those solutions, it is obviously necessary to consider the technical engineering issues of implementation since they all involve Google displaying on its SERP a map

from a third party. In that regard, Dr Emmerich suggested three alternative means of implementation:

- i) query-based service implementation (“QBI”);
- ii) geocoded service implementation (“GSI”);
- iii) crawler-based implementation (“CBI”).

165. QBI would involve Google forwarding the geographic query entered by the user to the third party map provider, who would then return a thumbnail map. To operate effectively, the third party provider (e.g. Streetmap) would have to provide an automatic service for retrieving a thumbnail map, so that it would rapidly return an appropriate image. As Dr Emmerich acknowledged, this relies on the quality of the third party provider’s service since it had to interpret the query separately from Google.
166. However, a significant issue for Google is latency: i.e. delay in generating the SERP for users. Google’s evidence emphasised the great importance of minimising delay and that even apparently slight increases in latency have a significant impact. A Google experiment reported in November 2006 revealed that a 0.5 second delay in generating the SERP caused a 20% drop in traffic, while a further experiment in 2009 found that slowing down the load time of the SERP by 0.1 to 0.4 seconds over 4-6 weeks reduced the number of searches per user by on average 0.2% to 0.6%, which is of consequence given the level of Google searches. The new-style Maps OneBox with the Google thumbnail loads on average within 71 milliseconds (ms) of the main part of the SERP, whereas Dr Emmerich recognised that under QBI the third party map could take over 0.5 seconds to load. Although, as Dr Emmerich pointed out, there is not a direct ‘read across’ from the Google experiments, since they concerned delay to the whole of the SERP for all searches (i.e. not merely for geographic searches and even then only for the Maps OneBox element of the SERP), I think it is clear that delay of that kind would have a serious impact on the quality of the Maps OneBox as perceived by users. Dr Emmerich accordingly suggested that Google could have a ‘fallback’ or ‘timeout’ mechanism whereby if the third party map was not generated within a specified time, the SERP would revert to showing a Google Maps thumbnail. But even if that ‘timeout’ were specified at, say, 300 ms, this would lead to some small further delay.¹⁵
167. If solution (3) were adopted, then obviously such a fallback would not apply as a Google Map thumbnail would be included from the outset; but then either completion of the Maps OneBox would be delayed or it would remain incomplete, which would degrade the user experience.
168. Additionally, there would be a problem where the third party provider could not interpret the user query. Hence although Streetmap could recognise

¹⁵ The technical implications of Dr Emmerich’s proposal that Google could avoid that delay by loading the default Google map onto the user’s browser in the background, were effectively challenged by Mr Menzel.

postcodes, it could not respond to a natural language address query (e.g. “where is 33 Covertown Gardens, London?”). In that case, the Maps OneBox could not display a Streetmap thumbnail and again would have to revert to a Google Map thumbnail. Dr Emmerich agreed that if the user had selected Streetmap as its provider for the Maps OneBox (i.e. solutions (1) or (2) above) but then was presented with a map from Google Maps, it would be appropriate for Google to include an error message offering an explanation as to why the user was seeing a different map from the one expected. In the end, Dr Emmerich accepted in cross-examination that the QBI was not really appropriate for retrieving a thumbnail map from Streetmap where GSI would be much better; he said that the QBI method was really appropriate for third party mapping providers which did not do geocoding.

169. GSI would involve using the geographic coordinates derived by Google from the user’s search query. Google uses a geocoding operation internally to transform the query into geographic coordinates which serve to identify the location in terms of a coordinate system. Google uses those coordinates to retrieve an image from its map server which is presented in the Maps OneBox. A zoom level can be specified. Streetmap, like some other online map providers, had a geocoded service. Therefore under GSI Google would transmit the coordinates to the third party map provider who would generate a thumbnail map image.
170. Although probably less significant than with QBI, the GSI would also cause some delay. Dr Emmerich conducted a series of tests which found that loading a map image from Streetmap under this method would take on average 263 ms after the main part of the Google SERP had loaded (which took 670 ms). However, that is an average and several of the results were well over 300 ms. That is to be compared with the 71 ms for the Google thumbnail map: see para 166 above. Accordingly, I think there would remain a latency issue under this method.
171. Further, as with QBI, I find that Google had legitimate concerns as to whether the relevant map would be displayed. Some illustrations were given in evidence as to how a query to Streetmap can generate a wrong result. I recognise that these examples may be exceptional as each map provider obviously seeks to furnish the correct map for the address or location requested. Google Maps is no doubt also capable of error and will not always be up-to-date. But I consider that Google is appropriately concerned at the accuracy and relevance of the information on its SERP, and that the Maps OneBox is presented as Google’s own offering. There is in my view a material difference between, on the one hand, Google displaying a blue link to a third party website which the user finds is inaccurate once it is accessed, and on the other hand, information presented directly on the Google SERP which proves irrelevant or unreliable. The quality of the SERP is (along with speed of response) the key means by which general search engines compete. The Maps OneBox is not simply a convenient means of access to a full-size map, but information for the user in its own right. I think this aspect should not be exaggerated, and that if solution (2) were adopted, where a deliberate selection of the mapping provider is made in the Search Settings, the objection loses

much of its force. But even then, the user of the computer may not be the same person who previously selected the mapping provider in the Search Settings. However, I consider that a more significant problem arises from the variation in the extent of coverage of different online mapping providers. Streetmap, for example, covers Great Britain but not, as I understand it, the Channel Islands. If a user searches for an address in Jersey, and Streetmap was the provider selected in Search Settings, the Maps OneBox could not display a thumbnail from Streetmap: it would have to revert to Google Maps, which could create confusion or dissatisfaction unless a note of explanation was displayed as well. If solution (1) (single thumbnail and alternative links) or (3) (multiple maps) was adopted, the alternative providers would have to change from the one whose map was displayed previously for another query.

172. Google raised various other objections (e.g. regarding zoom levels), some of which I regard as more significant than others. But taking all the considerations together, I am satisfied that the practical issues and problems involved mean that Google could legitimately and reasonably regard use of either QBI or GSI as inappropriate methods of implementation.
173. CBI would provide much the best implementation in terms of performance. This would involve Google writing a web crawler program that would retrieve static images of all the map “tiles” on the third party website and store them on Google’s own servers. Unlike QBI or GSI, display of a thumbnail map using CBI would therefore not depend on performance of the third party website. No issue of latency would arise. However, as Dr Emmerich readily acknowledged, it was the most complicated and expensive of the three methods. Hence, to display a map from Streetmap in this way, Google would need to:
 - i) develop a bespoke crawler for Streetmap that would have to crawl all of its mapping tiles at regular intervals, at every zoom level supported by Streetmap;
 - ii) engage in work to geocode and index the data which it then stored;
 - iii) create a service to retrieve the required images and combine them into the desired map with the right level of zoom; and
 - iv) since the crawled images are protected by copyright, potentially enter into a copyright licence with owners of the underlying mapping data.
174. Moreover, since any course which Google was required to adopt to comply with EU competition law as regards online mapping providers for the UK would apply equally as regards mapping providers for other countries or regions of the EU where Google was dominant, Google would have to undertake all this work for each third party provider in Europe whose maps it was required to display.
175. This approach would impose a substantial additional burden and cost on Google. It would be incurred in circumstances where Google already had all the necessary cartographic data to display a thumbnail map derived from

Google Maps. I have no hesitation in finding that this would be disproportionate.

176. Mr Hoskins emphasised the fact that before launching the new-style Maps OneBox, Google did not even consider or assess whether it might be practicable to offer the user a choice as to the map that would be displayed. That may be because Google did not regard the new style Maps OneBox as having an appreciable effect on competition, as I have indeed found. But whatever the explanation, this is of course not determinative of the question facing the court. On that question, Google has satisfied me that implementation of any of the three alternative solutions proposed by Dr Emmerich was not required by any obligation of proportionality. It may be that this is why, in the light of the evidence, Counsel for Streetmap no longer urged those solutions at the end of the trial.

CONCLUSION

177. For the reasons set out above, I find that:
- i) The introduction by Google in the UK in June 2007 of the new-style Maps OneBox was not reasonably likely appreciably to affect competition in the market for online maps;
 - ii) If, contrary to my primary finding, it was likely to have such an effect, Google's conduct in that regard was objectively justified;
 - iii) In any event, no conduct complained of was attributable to the 2nd and 3rd Defendants.
178. Accordingly, on the assumption that Google held a dominant position, it did not commit an abuse.

APPENDIX

Total Unique Visitors to UK Mapping Sites ('000)

	June 2006	July 2006	August 2006	Sept. 2006	Oct. 2006	Nov. 2006	Dec. 2006	January 2007	February 2007	March 2007	April 2007	May 2007	June 2007	July 2007	August 2007
<u>All Maps</u>	12,623	13,500	13,970	13,445	13,193	13,208	12,620	13,434	13,104	13,827	14,135	14,215	13,947	14,272	14,124
<u>Google</u>	4,619	5,059	5,408	5,305	5,556	5,390	5,081	6,013	5,889	6,676	8,125	8,115	8,019	8,358	8,205
<u>MultiMap</u>	7,040	7,611	8,007	7,465	6,964	6,712	6,220	6,917	6,799	7,048	6,729	6,955	6,545	6,720	6,807
<u>Streetmap / BTex</u>	3,660	3,792	3,962	3,854	3,627	3,412	3,002	3,622	3,273	3,483	3,364	3,518	3,206	2,784	2,694

Source: ComScore

GLOSSARY

		Judgmt para
API	application programmable (or program) interface: a programmable toolkit for building software applications (e.g. to enable a hyperlinked map to be integrated into a webpage)	21
below the fold	not visible on the computer screen without scrolling down	10
blue link	hypertext (qv) link (usually underlined in blue) that appears on the SERP (qv) in response to a search query	11
browser	software application to retrieve and present information resources on the worldwide web: e.g. Firefox, Microsoft Internet Explorer	14
CTR	click-through rate: the proportion of times a particular displayed hyperlink (qv) is clicked on by users	73
general location query	query for locations of a generalised nature: e.g. “cafés in Holborn”	18
geographic query	query in the form of geographic information: e.g. address, postcode, district, town or region	18
hyperlink	word, phrase or image that can be clicked on for access to a document, full image or website	11
hypertext	word or words that operate as a hyperlink	11
latency	time taken from the input of a query to the appearance of the result	164
navigational query	query for a particular website or web page	21
search engine	software system which searches for information on the world wide web: e.g. Google, Bing, Baidu	10

SERP	search engine results page: the displayed results to a search on the search engine	10
slippy map	online map which can be dragged with the mouse (or by touch on touchscreens) to display further areas	23
specific location query	query for a location identified by name or description: e.g. "British Museum", "The Ivy restaurant"	18
URL	uniform resource locator: a specific website address (e.g. www.britishmuseum.org)	21