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International Business Machines Corporation

IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF ARIZONA

International Business Machines Corporation, a New York Corporation, Plaintiff, vs. Expedia, Inc., a Washington Corporation; Hotels.com, L.P., a Texas Limited Partnership; Hotwire, Inc., a Delaware Corporation; and Orbitz, LLC, a Delaware Limited Liability Company, Defendants.	No. 2:19-cv-02296-SMB **FIRST AMENDED COMPLAINT FOR PATENT INFRINGEMENT** **JURY TRIAL DEMANDED**

Plaintiff International Business Machines Corporation ("IBM"), for its Complaint for Patent Infringement against Expedia, Inc., Hotels.com L.P., Hotwire, Inc., and Orbitz, LLC (collectively "Defendants"), alleges as follows:

INTRODUCTION

1. IBM is a world leader in technology and innovation. IBM spends billions of dollars each year on research and development, and those efforts have resulted in the

issuance of more than 110,000 patents worldwide. Patents enjoy the same fundamental protections as real property. IBM, like any property owner, is entitled to insist that others respect its property and to demand payment from those who take it for their own use. Defendants have built their business model on the use of IBM's patents. Moreover, despite IBM's repeated attempts to reach a business resolution, Defendants refuse to negotiate a license to IBM's patent portfolio. This lawsuit seeks to stop Defendants from continuing to use IBM's intellectual property without authorization.

NATURE OF THE CASE

2. This action arises under 35 U.S.C. § 271 for Defendants' infringement of IBM's United States Patent Nos. RE41,440 (the "'440 patent"), 6,778,193 (the "'193 patent"), 7,543,234 (the "'234 patent"), 8,316,348 (the "'348 patent"), 8,832,265 (the "'265 patent"), 9,298,855 (the "'855 patent"), and 9,569,414 (the "'414 patent") (collectively the "Patents-In-Suit").

THE PARTIES

3. Plaintiff IBM is a New York corporation, with its principal place of business at 1 New Orchard Road, Armonk, New York 10504.

4. Defendant Expedia, Inc. is a Washington corporation ("Expedia") with a principal place of business at 333 108th Avenue NE, Bellevue, Washington 98004. Expedia may be served through its registered agent for service, National Registered Agents, Inc., 3800 N Central Ave Suite 460, Phoenix, Arizona 85012. Expedia provides online travel reservation and related services to consumers and local partners directly through the websites at www.expedia.com and through the Expedia mobile applications.

5. Expedia also provides online travel reservation and related services to consumers through its subsidiaries: Hotels.com L.P., Hotwire, Inc., and Orbitz, LLC (collectively, the "Expedia Subsidiaries"). Hotels.com L.P., Hotwire, Inc., and Orbitz, LLC are wholly-owned and controlled subsidiaries of Expedia.

6. Expedia and the Expedia Subsidiaries belong to a corporate family that is comprised of affiliated companies that offer travel-related services in this District.

Expedia Group, Inc. ("Expedia Group") is the parent corporation of Expedia and owns Defendants Hotels.com L.P., Hotwire, Inc., Orbitz Worldwide LLC, Orbitz Worldwide, Inc., and Orbitz, LLC through its ownership and control of Expedia. Expedia Group is a Delaware corporation with a principal place of business at 333 108th Avenue NE, Bellevue, Washington 98004.

7. According to Expedia Group's 10-K, Brand Expedia® is one of Expedia Group's "travel brands."[1] Expedia's "technology platforms" support several of the Expedia Group's brands, including expedia.com, travelocity.com, and orbitz.com.[2]

8. Expedia operates the website located at http://www.travelocity.com. Travelocity is one of Expedia Group's "travel brands."[3] Expedia's "technology platforms" support several of the Expedia Group's brands, including Travelocity.[4] Expedia provides online travel reservation and related services to consumers and local partners directly through the websites at www.travelocity.com and through the Travelocity mobile applications.

9. Defendant Hotels.com L.P. is a Texas limited partnership ("Hotels.com") with a principal place of business at 5400 Lyndon B Johnson Freeway #500, Dallas, Texas, 75240. Hotels.com may be served through its registered agent for service, National Registered Agents, Inc., 1999 Bryan Street, Suite 900, Dallas, Texas 75201. Hotels.com operates the website located at http://www.hotels.com and the Hotels.com mobile applications. Hotels.com provides online hotel reservation and related services to consumers and local partners through the website www.hotels.com and through the Hotels.com mobile applications. Hotels.com is a wholly-owned subsidiary of Expedia.

10. Hotels.com is one of Expedia Group's "travel brands."[5] The Hotels.com technology platform supports [Expedia Group's] hotel-only offering, including

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[1] Expedia Group's 2018 Form 10-K at 1, *available at* https://ir.expediagroup.com/sec-filings/sec-filing/10-k/0001324424-19-000006.

[2] *Id.* at 7.

[3] *Id.* at 1.

[4] *Id.* at 7.

[5] *Id.* at 1, 3.

Hotels.com . . . ."[6]

11. Defendant Hotwire, Inc. is a Delaware corporation ("Hotwire") with a principal place of business at 655 Montgomery Street Suite 600, San Francisco, California 94111. Hotwire may be served through its registered agent for service, National Registered Agents, Inc., 3800 N Central Ave Suite 460, Phoenix, Arizona 85012. Hotwire provides online travel reservation and related services to consumers and local partners through the website www.hotwire.com and through its Hotwire mobile applications. Hotwire is a wholly-owned subsidiary of Expedia.

12. Hotwire is one of Expedia Group's "travel brands."[7] "The Brand Expedia technology platform supports [Expedia Group's] full-service and multi-product brands, including . . . certain parts of the Hotwire brand."[8]

13. Defendant Orbitz, LLC is a Delaware limited liability company ("Orbitz") with a principal place of business at 500 W Madison Street, Suite 1000, Chicago, Illinois 60661. Orbitz, LLC may be served through its registered agent for service, National Registered Agents, Inc., 208 S. LaSalle Street, Suite 814, Chicago, IL 60604. Orbitz, LLC provides online travel reservation and related services to consumers and local partners through the website www.orbitz.com and through the Orbitz mobile applications. Orbitz, LLC is a wholly-owned subsidiary of Expedia.[9]

14. Orbitz is one of Expedia Group's "travel brands."[10] Expedia's "technology platforms" support several of the Expedia Group's brands, including Orbitz.[11]

15. According to Expedia, its servers related to expedia.com and the associated mobile applications are located in Chandler, AZ, along with the servers for the websites

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[6] *Id.* at 7.
[7] *Id.* at 1.
[8] *Id.* at 7.
[9] Orbitz, LLC is wholly-owned by Orbitz Inc. (a Delaware corporation), which is wholly-owned by Orbitz Worldwide, LLC (a Delaware corporation), which is wholly-owned by Orbitz Worldwide, Inc. (a Delaware corporation), which is wholly-owned by Expedia. *See* Declaration of Michael Marron In Support of Defendants' Motion To Dismiss Under Rule 12(b)(3) and Rule 12(b)(6) ¶ 5, *Int'l Business Machines Corp. v. Expedia, Inc.*, Case No. 1:17-cv-01875-LPS-CJB (D. Del. May 29, 2018) (D.I. 25).
[10] Expedia Group's 2018 Form 10-K at 1.
[11] *Id.* at 7.

and mobile applications operated by Hotels.com, Orbitz, and Hotwire.[12]

FACTUAL BACKGROUND

A. IBM Is A Recognized Innovator.

16. IBM is recognized throughout the world as a pioneer in many aspects of science and technology. On eight occasions, more times than any other company or organization, IBM has been awarded the U.S. National Medal of Technology, the nation's highest award for technological innovation. During IBM's over-100-year history, IBM's employees have included six Nobel laureates, six Turing awards, five National Medal of Science recipients, and at least fourteen inventors in the National Inventors Hall of Fame.

17. These and other IBM employees have introduced the world to technology that the global community takes for granted today, including the dynamic random access memory—DRAMs—found in nearly all modern computers; magnetic disk storage—hard disk drives—found in computers and portable music players; and some of the world's most powerful supercomputers, including Deep Blue, the first computer to beat a reigning chess champion and which is on display at the Smithsonian's National Museum of American History in Washington, D.C. IBM's commitment to developing these types of advanced computing technologies has helped to usher in the information age.

B. IBM Is Committed To Protecting Its Innovations Through The Patent System.

18. IBM's research and development operations differentiate IBM from many other companies. IBM annually spends billions of dollars on research and development, yielding inventions that have literally changed the way the world works. For over two decades the United States Patent and Trademark Office ("USPTO") has issued more patents to IBM than to any other company in the world.

19. Like the research upon which the patents are based, IBM's patents also benefit

[12] *See* Declaration of Michael Marron In Support of Defendants' Motion To Dismiss Under Rule 12(b)(3) and Rule 12(b)(6) ¶¶ 8, 10, 13, 14, *Int'l Business Machines Corp. v. Expedia, Inc.*, Case No. 1:17-cv-01875-LPS-CJB (D. Del. May 29, 2018) (D.I. 25).

society. Indeed, the Supreme Court has recognized that the patent system encourages both the creation and the disclosure of new and useful advances in technology. Such disclosure, in turn, permits society to innovate further. And, as the Court has further recognized, as a reward for committing resources to innovation and for disclosing that innovation, the patent system provides patent owners with the exclusive right to prevent others from practicing the claimed invention for a limited period of time.

C. IBM Routinely Licenses Its Patents In Many Fields But Will Enforce Its Rights Against Those Who Use Its Intellectual Property Unlawfully.

20. IBM's commitment to creating a large patent portfolio underscores the value that IBM places in the exchange of innovation, and disclosure of that innovation, in return for limited exclusivity. Indeed, IBM has used its patent portfolio to generate revenue and other significant value for the company by executing patent cross-license agreements. The revenue generated through patent licensing enables IBM to continue to commit resources to innovation. Cross licensing, in turn, provides IBM with the freedom to innovate and operate in a manner that respects the technology of others.

21. Given the investment IBM makes in the development of new technologies and the management of its patent portfolio, IBM and its shareholders expect companies to act responsibly with respect to IBM's patents. IBM facilitates this by routinely licensing its patents in many fields and by working with companies that wish to use IBM's technology in those fields in which IBM grants licenses. When a company appropriates IBM's intellectual property but refuses to negotiate a license, IBM has no choice but to seek judicial assistance.

D. IBM Invented Methods For Obtaining Enriched Web Server Activity Data Of Cached Web Content.

22. The inventors of the '440 patent developed the patented technology as part of IBM's efforts to allow tracking of critical performance data related to information access requests to a web site server. At the time of the invention of the '440 patent, data networks were struggling under the weight of soaring bandwidth demand due to the explosive

growth in users seeking web access. One way in which engineers sought to address this challenge was by implementing web caching, which is the process of maintaining frequently accessed web content locally in a location close to the requester, so that redundant user requests for web content do not require sending the individual requests and returned content over the wide area network. However, web caching can result in significant downsides to web content publishers, including an inability to accurately track web traffic as a result of visitors accessing web content from caching servers, as well as users receiving outdated or stale content from infrequently or slowly-updated caching servers.

23. In light of the above considerations, the inventors of the '440 patent developed novel systems and methods for gathering enriched web server activity data for purposes of tracking critical performance data. In particular, the inventors of the '440 patent disclose and claim the use of an enriched request to the origin server, which may be a small image request such as a request for a single pixel clear Graphic Interchange Format ("GIF"), as a "surrogate" for the complete set of web log records. The small image is non-cacheable, ensuring that the origin server will receive the enriched request even if the requested page, or portions of the page, are retrieved from one or more caches not located at the origin server. Accordingly, the '440 patent allows web providers to track critical performance data, while utilizing web caching to simultaneously benefit from faster and more efficient decentralized delivery networks, avoiding the tradeoff required in the prior art between faster rendering of web pages and control over data tracking.

E. IBM Invented Methods of Improving Contextual Searching Using Visual Workspaces.

24. The inventors of the '193 patent developed the patented technology as part of IBM's efforts to improve graphical user interfaces ("GUIs") for customer self-service search and retrieval systems. Customer search and retrieval systems may include knowledge management systems, information portals, search engines, and data miners. Providing efficient and satisfactory search results using such systems requires that users

provide relevant contextual information in conjunction with a search query. At the time of the invention, engineers attempted to solve this problem through the use of GUIs, which represented available applications and data sets via icons. However, these prior art GUIs failed to address the full range of relevant contextual variables for user queries, and also did not provide a graphical method for fine tuning the relevant context variables.

25. The inventors of the '193 patent thus recognized a need to provide an improved GUI for customer search and retrieval functions capable of facilitating the efficient location of relevant resources in response to a query by enabling the expression of a user's context as part of the query and indicating the relevance of returned results in that context. The inventors of the '193 patent developed systems and methods of using user context attributes and graphical user interfaces to allow users to search for content and subsequently narrow the results based on user context to obtain increased specificity and accuracy in search results. The patented technology of the '193 patent provides for more efficient search and retrieval in part through a novel iconic graphical user interface that enables the expression of a user's context as part of the user query, which has the benefit of minimizing user time and resource intensive system processes.

F. IBM Invented Methods Of Stacking Portlets In Portal Pages.

26. The inventors of the '234 patent developed the patented technology as part of IBM's efforts to improve customizable portal pages. Unlike traditional off-line media, portal pages allow for the display of dynamically updated information aggregated from different sources on computer screens, tablets, mobile devices, and other media, based on user preferences. A portal page may be comprised of individual portlets, which access hardware and software to gather data and offer information to portal pages. Portals and portlets can be associated with preferences selected by the user and thus can provide an effective mechanism to view information of interest from a variety of sources at the same time. However, as the number of portlets increase, portal pages can become overcrowded and disorganized. In the prior art, overcrowding often resulted in cluttered portal pages that would inhibit the user from effectively viewing and interacting with all of the

available portlets. That problem was unique to computer systems, because unlike traditional media, such as newspapers, magazines, and books, portals and portlets are not limited to predetermined content, limited information sources, or static areas of display.

27. The inventors of the '234 patent recognized a need to improve the customization of portal pages. They developed a novel approach for organizing and displaying stackable portlets on a portal page, which includes determining whether a subset of portlets is stackable and providing a control means for the user to select between subsets of portlets not currently presented to the user. By developing a method for stacking subsets of portlets and allowing users to select which subset to display, the inventors resolved the issue of the cluttered portal page with a new and improved way of organizing and displaying the portlets comprising portal pages. The '234 patent thus extends the benefits of portal pages by allowing users to interact effectively with portal pages and generate as many portlets as they would like, based on their preferences, without overcrowding their device screen. Specifically, the '234 patent discloses and claims novel methods of organizing portlets not only as "stacks" but as "stacks of stacks," such that only a subset of portlets may be presented at any given time, based on characteristics such as common hardware, software, content type, markup, user profiles, and user preference.

G. IBM Invented Methods, Frameworks, and Program Products For Formatting And Serving Web Content.

28. The inventors of the '348 and '414 patents developed the patented technologies as a way to improve web development by simplifying the display of dynamic content. Prior to the '348 and '414 patents, web developers who wished to embed dynamic content on their websites would typically embed a URL that called to a JavaScript library to add in the dynamic content. The dynamically generated JavaScript library contained the content to be displayed and provided a function to embed that content directly on to the page. A web developer could adjust the look and feel of the website by using cascading style sheets (CSS), but this approach was very limited on the type of formatting that could be performed on the data. Web developers were thus essentially restricted by the

formatting provided by the JavaScript library that they called. If the developer wanted different formatting, then he or she was required to create a new dynamically generated JavaScript library that contained the new functions and the content to perform the desired formatting. Thus, developers were required to create a new dynamically generated JavaScript library for each different format they may desire, even if it was passing the same content. Having to develop multiple JavaScript libraries led to several problems. First, it was time consuming to design and create each of the dynamically generated JavaScript libraries. Second, each dynamically generated JavaScript library had to be able to interface with the various backend systems that provide the data, leading to an increase in network traffic and use of bandwidth on the backend systems. And third, as the number of versions of the dynamically generated JavaScript libraries increased, due to either variations of the content or the formatting, the burden of maintaining, storing, finding, and constantly updating those libraries increased as well.

29. The inventors of the ’348 and ’414 patents addressed these problems by separating the dynamic data from the formatting functions. The inventors realized that if they generated the dynamic data as a set of JavaScript objects without any HTML formatting, they could pass the data as a parameter to a set of JavaScript functions which provide the formatting. This allowed for a more efficient approach for serving dynamic content because the one set of JavaScript objects can be formatted by different sets of JavaScript functions based on the type of formatting required. Conversely, one set of JavaScript functions can format different sets of JavaScript objects depending on the type of content that is to be served. This approach had several advantages. The JavaScript functions could be static, rather than dynamic, because they were taking, as input, the dynamic JavaScript data. The JavaScript data and the functions could also be stored on different servers since they were no longer tied together. Furthermore, the JavaScript functions and the JavaScript data could be updated independent of each other; thus, if there was a change in the content of the data, the new approach would not require updating the set of JavaScript functions. Additionally, a new set of JavaScript functions did not

need to be created for each content type and format type; rather, a single set of JavaScript functions could be developed to provide the desired format for all types of dynamic JavaScript content. Thus, if a developer wanted different formatting, the developer only needed to create one new set of JavaScript functions, as opposed to developing several JavaScript libraries to format each set of content that may be served. Lastly, this would also lead to a reduction in the amount of database space needed to store the content and the functions, as each combination of content and formatting need not be stored as a unique JavaScript library. By separating the dynamic JavaScript data from the functions that format that data, the inventors of the '348 and '414 patents greatly increased web developers' degree of formatting flexibility.

H. IBM Invented Methods And Apparatuses For Monitoring And Synchronizing User Interface Events With Network Data.

30. The inventors of the '265 patent developed the patented technologies as a way to improve the web session monitoring and anomaly detection and DOM change reporting systems for e-businesses. As more and more people gained access to the internet and e-businesses began to grow in size, those e-businesses found themselves dealing with a tremendous amount of data related to all aspects of their systems. The sheer volume of data made it difficult for e-businesses to effectively monitor their systems to ensure they were healthy, functioning properly, and up to date. The volume of data also made it difficult to understand, let alone explain, why one month's business was different from that of the previous month. One approach that prior art methods took to try and make sense of all of the data was to focus on and analyze individual sources of information that had been determined to be important. That approach looked for anomalies in those particular tracked events. However, this approach had drawbacks. By focusing on a single stream of data, the monitoring system could easily produce false negatives by concluding that the system is running soundly while missing other events that were actually causing the abnormal and/or problematic behavior in the system. Analyzing a single stream of data also has the potential to produce false positives, such that resources were wasted

analyzing information that was in fact not problematic. These problems were further compounded by the distributed nature of the data stores that housed the relevant information. When data was spread around a company and separately analyzed by different departments, it was difficult to get a complete picture of what was occurring at any given time. This especially occurred when different departments produced redundant data and analytics or neglected to update the data sources they were using.

31. The inventors of the '265 patent devised a system that addressed these deficiencies in order to allow e-businesses to tackle the problem of too much data. Rather than viewing the vast amounts of data as a problem, the inventors of the '265 patent realized that the information could be used to get a more accurate picture of the functioning of an e-business's system. The inventers designed an analysis system that collected and stored all of a business's web session events for use by the system. Rather than just monitoring particular events in the web session data to search for anomalies, the analysis system created a model that could be used to monitor all of the web events together.

32. This analysis system was composed of two modules: a modeling module and a monitoring module. The modeling module used historical web session data to build a model that approximated normal activity at the e-business. This created a more holistic model of the e-commerce system because it relied on all of the web session data, not just particular events. Once the model was complete, the monitoring module used that model to evaluate current web session data to determine whether or not any anomalies were present in the current data sets, evaluate how anomalous the event was, and then flag only the most serious events for follow up by employees. This two-module system allowed for more efficient use of resources, as each module could focus on the specific task assigned to it without being slowed down by the bandwidth being used by the other, an especially important consideration given the vast amount of data involved. Additionally, by using a model of all of the web session data to detect anomalies, false positives were minimized. This is because while, in isolation, a certain event might appear to be an anomaly, when

viewed in light of other simultaneous occurring events, it may in reality be normal system behavior. Thus, the inventors of the '265 patent invented a method and system for turning the problem of too much data into an analysis tool that was more accurately able to detect and flag true problems in an e-business's system.

33. The inventors of the '265 patent also included in their invention the ability to replay the web sessions such that the detected outliers are synchronized with the user interface events associated with these outliers in the same order as the outliers and the associated events had occurred. This additional functionality provided for a fulsome and detailed analysis of the anomalous data by allowing for a more detailed investigation of the underlying events that generated these outliers. By being able to replay the web sessions that includes both the outliers and the associated events, users of this invention have the capability of repeatedly analyzing these web sessions to carefully observe the effects that the associated events had on the data and confirm which specific segments of the associated events may have led to the outliers.

34. The inventors of the '265 patent also included in their inventive system a specific capability of identifying any Document Object Model (DOM) changes to the webpages that are displayed during the web sessions, identifying how often these changes occurred, and generating a model based on these number of occurrences. DOMs represent the objects that comprise the structure and content of a webpage. Thus, any changes made to a webpage could potentially be detected by noting changes in the webpage's underlying DOM. The patent's addition of a method to detect the frequency of changes in the DOM of a webpage provided a capability to investigate how often the webpage is changed and when such changes occur, including changes that are undetectable merely by observing the outputted webpage. This in turn would allow the user of the method to have a full picture of the frequency of anomalies that occur at the DOMs of various webpages and to take any actions needed to resolve this abnormal behavior.

I. IBM Invented Methods For Optimization-Based Visual Context Management.

35. The inventors of the '855 patent invented novel methods of updating computer display screens to incorporate and display new information while minimizing user confusion and information overload. When performing searches, users often times seek to incorporate additional data into their current search or to filter previously returned results to focus in on the most pertinent information. When this occurs, computers are presented with the problem of how to display the newly requested data and information to the users in a manner that allows the user to incrementally piece together the information across the successive displays in order to enhance the users' understanding. Because of the dynamic and unpredictable nature of computer searches, it is impractical, if not impossible, to pre-determine and map out every conceivable visual transformation that could occur during a human-computer conversation. There was a need to be able to dynamically update and transform the display with new information in a way that did not detract from a user's ability to comprehend all relevant information as a coherent whole. Prior approaches to solving this problem usually focused on one constraint at a time and would make decisions based on the potential changes to that particular constraint. This approach had several drawbacks, the most notable being that it did not consider the interaction between various constraints and the potential negative effects that came from focusing on one particular constraint in ignorance of others. Therefore, existing visual context management approaches may not generate desirable results. For example, it could lead to an overcrowded display or one that changed too much for a user to be able to follow.

36. The inventors of the '855 patent devised a way to solve this problem and to effectively manage the transitions between successive displays to incorporate new data. The inventors realized that after a user requested additional information related to a search, if the computer could optimize the display using all of the relevant constraints, a set of optimal visual transformations could be determined that would improve a computer's

ability to incorporate that new information. Specifically, the inventors realized that if the display transformation was based on metrics measuring the visual overlap and the semantic overlap of displayed items, it would help a user to extract and integrate information within existing visual context. In, addition, the inventors realized that the display metrics could be adjusted based on user's preferences, such as when a user was merely browsing or trying to filter and hone in on the most relevant information. By working to optimize visual transformation in consideration of all appropriate metrics, the new display could effectively provide the new information requested by the user. Thus, the inventors devised methods to facilitate a smooth transition from one displayed computer screen to another to enhance user understanding of the information presented.

J. Defendants Have Built Their Business By Infringing IBM's Patents.

37. Expedia and its subsidiaries connect consumers wishing to make travel or related reservations with providers of those services. Expedia has grown rapidly and is now a Fortune 500 company with billions of dollars of revenue per year.

38. Rather than build their business on their own technologies, Expedia and its subsidiaries have appropriated the inventions of the Patents-In-Suit. Websites under Expedia's and/or its subsidiaries' control, including at least www.expedia.com, www.travelocity.com, www.hotels.com, www.hotwire.com, and www.orbitz.com use the technology claimed by the Patents-In-Suit to provide travel and reservation services to their users. Mobile applications under Expedia's and/or its subsidiaries' control, including the Expedia, Travelocity, Hotels.com, Hotwire, and Orbitz mobile applications running on, for example, Apple iOS and Google Android operating systems, use the technology claimed by the Patents-In-Suit to provide travel and reservation services to their users.

39. IBM began informing Defendants that they infringe IBM's patents in October of 2011. Since then, IBM has written several follow up letters to Orbitz, Expedia, and HomeAway[13] to inform them that they were infringing additional patents, as the scope of

[13] HomeAway.com, Inc. is a Delaware corporation ("HomeAway") and is a wholly-owned subsidiary of Expedia. *See* Declaration of Michael Marron In Support of

their infringement became clear.

40. On October 1, 2015, IBM sent a letter to inform Expedia that it was infringing the '440 patent.

41. Since at least 2003, Expedia, Hotels.com, and Hotwire have been part of the same company.

42. Since at least 2015, Expedia and Orbitz have been part of the same company.

43. On information and belief, Hotels.com, Hotwire, and Orbitz were aware or should have been aware that they were infringing at least the '440 patent based at least on the correspondence sent to Expedia in October 2015.

44. IBM has repeatedly attempted to engage with Expedia and its subsidiaries, and presented detailed examples of their infringement of numerous IBM patents. But Expedia and its subsidiaries have continued to willfully infringe IBM's patents so as to obtain the significant benefits of IBM's innovations without paying any compensation to IBM.

45. On May 15, 2019, IBM sent Expedia, Orbitz, Hotels.com and Hotwire a letter informing them that they were infringing several patents, including the '440 patent, the '193 patent, and the '234 patent. IBM attached the patents and detailed claim charts, showing evidence of infringement of all three patents.

46. On September 12, 2019, IBM sent Expedia, Orbitz, Hotels.com and Hotwire a letter informing them that they were infringing '348 patent, the '265 patent, the '855 patent, and the '414 patent. IBM attached the patents and included detailed technical analysis, showing infringement evidence of infringement of all four patents.

47. Because IBM's multi-year struggle to negotiate a license agreement that remedies Expedia and its subsidiaries' unlawful conduct in the form of infringement of the Patents-In-Suit and other IBM patents has failed, IBM has been forced to seek relief

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Defendants' Motion To Dismiss Under Rule 12(b)(3) and Rule 12(b)(6) ¶ 5, *Int'l Business Machines Corp. v. Expedia, Inc.*, Case No. 1:17-cv-01875-LPS-CJB (D. Del. May 29, 2018) (D.I. 25). Homeaway is one of Expedia Group's "travel brands." Expedia Group's 2018 Form 10-K at 1. Homeaway provides listings for Home rentals, reservations, and related services to consumers and local partners through the website www.homeaway.com and through the Homeaway mobile applications.

through litigation. Among other relief sought, IBM seeks royalties on the billions of dollars in revenue that Defendants have received based on their infringement of IBM's patented technology.

JURISDICTION AND VENUE

48. IBM incorporates by reference paragraphs 1-47.

49. This action arises under the patent laws of the United States, including 35 U.S.C. § 271 *et seq*. The jurisdiction of this Court over the subject matter of this action is proper under 28 U.S.C. §§ 1331 and 1338(a).

50. Venue is proper in this Court pursuant to 28 U.S.C. §§ 1391(b) and (c) and 1400(b). Defendants conduct business in Arizona, by at least offering for sale and selling products and services through their websites (www.expedia.com, www.travelocity.com, www.hotels.com, www.hotwire.com, www.orbitz.com) and mobile applications, which are accessible in Arizona, because infringement has occurred and continues to occur in Arizona, and because Defendants have a regular and established place of business in Arizona.

51. Venue is also proper as to Expedia because Expedia has committed acts of infringement in the District and has a regular and established place of business in the state of Arizona, at least through Expedia's servers related to expedia.com, travelocity.com, and the associated mobile applications located in Chandler, AZ.[14]

52. On information and belief, Expedia occupies data center space in a facility at 2121 S. Price Rd. #011, Chandler, Arizona 85286 (the "Chandler Data Center"). The Chandler Data Center is a physical place in the District, is operated in a steady, uniform, orderly, and methodical manner. The Chandler Data Center is an established, continued physical presence in Arizona. The Chandler Data Center is a regular and established place of business of Expedia in Arizona.

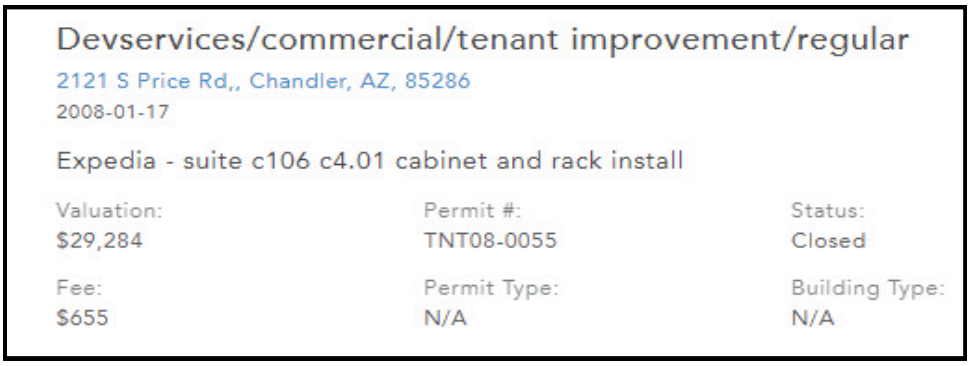
[14] *See* Declaration of Michael Marron In Support of Defendants' Motion To Dismiss Under Rule 12(b)(3) and Rule 12(b)(6) ¶ 8, *Int'l Business Machines Corp. v. Expedia, Inc.*, Case No. 1:17-cv-01875-LPS-CJB (D. Del. May 29, 2018) (D.I. 25).

53. The Maricopa County Treasurer's Office lists Expedia on tax records associated with the Chandler Data Center, and those tax records reflect that Expedia has paid the taxes due on the servers in the Chandler Data Center property from 2009 to 2017. A copy of the Maricopa County Treasurer's Office 2018 tax details for Expedia for the Chandler Data Center can be found at http://treasurer.maricopa.gov/parcel/TaxDetails.aspx?taxyear=2018.

54. On information and belief, Expedia owns and operates servers for the Brand Expedia® in the District at the Chandler Data Center.

55. On information and belief, Expedia owns and operates servers for the Brand Travelocity® in the District at the Chandler Data Center.

56. For instance, Expedia has had server cabinets and racks installed at the Chandler Data Center at least in 2008 and 2016.



BUILDZOOM, Federal Communications Group, https://www.buildzoom.com/contractor/federal-communications-group-inc-tempe-az (last visited April 4, 2019).

INSTAGRAM, BPG Technologies[15] (@bpgtech), https://www.instagram.com/p/BOQQeC1Dho9/?utm_source=ig_share_sheet&igshid=1rurpiucy52nh (last visited April 4, 2019).

57. On information and belief, to the extent that Expedia does not own the

[15] "BPG Technologies, LLC specializes in the design and installation of structured cabling systems" such as those required for the installation of new servers. *See* http://bpgtech.com/index.php/about (last visited April 3, 2019).

Chandler Data Center, Expedia leases the space from Digital Realty Trust, Inc. For instance, the Chandler Data Center at 2121 S. Price Rd. #011, Chandler, Arizona 85286 is branded as "Digital Realty Data Center Solutions."

58. On information and belief, Expedia leases/rents the Chandler Data Center space from Digital Realty Trust, Inc. and exercises complete control of the space that it leases/rents. For instance, Expedia hires contractors to perform work on their servers that are stored in the Chandler Data Center.

INSTAGRAM, BPG Technologies (@bpgtech), https://www.instagram.com/p/BOQQeC1Dho9/?utm_source=ig_share_sheet&igshid=1rurpiucy52nh (last visited April 4, 2019).

59. Expedia exercises control over the space that it leases/rents in the Chandler Data Center.

60. Expedia employees perform work on Expedia's servers that are located in the Chandler Data Center.

61. Expedia transacts business on servers located in the Chandler Data Center.

62. Expedia has full time employees who are principally located in Arizona and work at the Chandler Data Center.

63. Expedia's full time employees who are principally located in Arizona and work at the Chandler Data Center are collectively responsible for, among other things, Data Center operations support, Dev-Ops, and Infrastructure Operational Support.

64. To the extent that the operations described in the preceding paragraph are no longer performed at the Chandler Data Center, those operations were performed, at least

in part, at the Chandler Data Center on April 9, 2019.

65. Venue is also proper as to Expedia because Expedia has committed acts of infringement in the District and has a regular and established place of business in the state of Arizona, at least through Expedia's servers related to expedia.com and travelocity.com and the associated mobile applications located in Phoenix, AZ.

66. On information and belief, Expedia occupies data center space in a facility at 615 N 48th St, Phoenix AZ 85008 (the "Phoenix Data Center"). The Phoenix Data Center is a physical place in the District, is operated in a steady, uniform, orderly, and methodical manner. The Phoenix Data Center is an established, continued physical presence in Arizona. The Phoenix Data Center is a regular and established place of business of Expedia in Arizona.

67. The Maricopa County Treasurer's Office lists Expedia on tax records associated with the Phoenix Data Center, and those tax records reflect that Expedia has paid the taxes due on servers at the Phoenix Data Center property from 2013 to 2017. A copy of the Maricopa County Treasurer's Office 2018 tax details for Expedia for the Phoenix Data Center can be found at http://treasurer.maricopa.gov/parcel/TaxDetails.aspx?taxyear=2018.

68. On information and belief, to the extent that Expedia does not own the Phoenix Data Center, Expedia leases the space from Iron Mountain. For instance, the Phoenix Data Center at 615 N 48th St, Phoenix AZ 85008 is marked as an Iron Mountain Data Center.[16] On information and belief, Expedia leases/rents the Phoenix Data Center space from Iron Mountain and exercises complete control of the space that it leases/rents.

69. Expedia exercises control over the space that it leases at the Phoenix Data Center.

70. On information and belief, Expedia owns and operates Brand Expedia® servers in the District at the Phoenix Data Center.

71. On information and belief, Expedia owns and operates Travelocity® servers in the District at the Phoenix Data Center.

[16] *See* https://www.ironmountain.com/digital-transformation/data-centers/locations/phoenix-data-center.

72. Expedia employees perform work on Expedia's servers that are located in the Phoenix Data Center.

73. Expedia transacts business on servers located in the Phoenix Data Center.

74. Expedia has full time employees who are principally located in Arizona and work at the Phoenix Data Center.

75. Expedia's full time employees who are principally located in Arizona and work at the Phoenix Data Center are collectively responsible for, among other things, Data Center operations support, Dev-Ops, and Infrastructure Operational Support.

76. To the extent that the operations described in the preceding paragraph are no longer performed at the Phoenix Data Center, those operations were performed, at least in part, at the Phoenix Data Center on April 9, 2019.

77. On information and belief, in addition to maintaining a physical place in the District, Expedia has employees who work at the Chandler Data Center and/or Phoenix Data Center.

78. For example, several individuals on the professional social networking website LinkedIn hold themselves out on their profiles as current employees of Expedia, Inc. in Chandler and Phoenix, Arizona. The job titles in these LinkedIn profiles include: inventory coordinator, storage administrator, principal data center engineer, data center engineer, senior service transition manager, manager of data center operations, global manager of infrastructure operational support, project manager II data center services, and system administrator. The job duties of these Expedia employees include oversight of "all the hardware inventory required to run the [Expedia] websites for the two data centers in Arizona."

79. Venue is proper as to Hotels.com because Hotels.com has committed acts of infringement in the District and has a regular and established place of business in the state of Arizona, by operating as a broker that engages in the business of operating hotels in Arizona.

80. The various hotels in Arizona in which Hotels.com offers rooms for sale on its

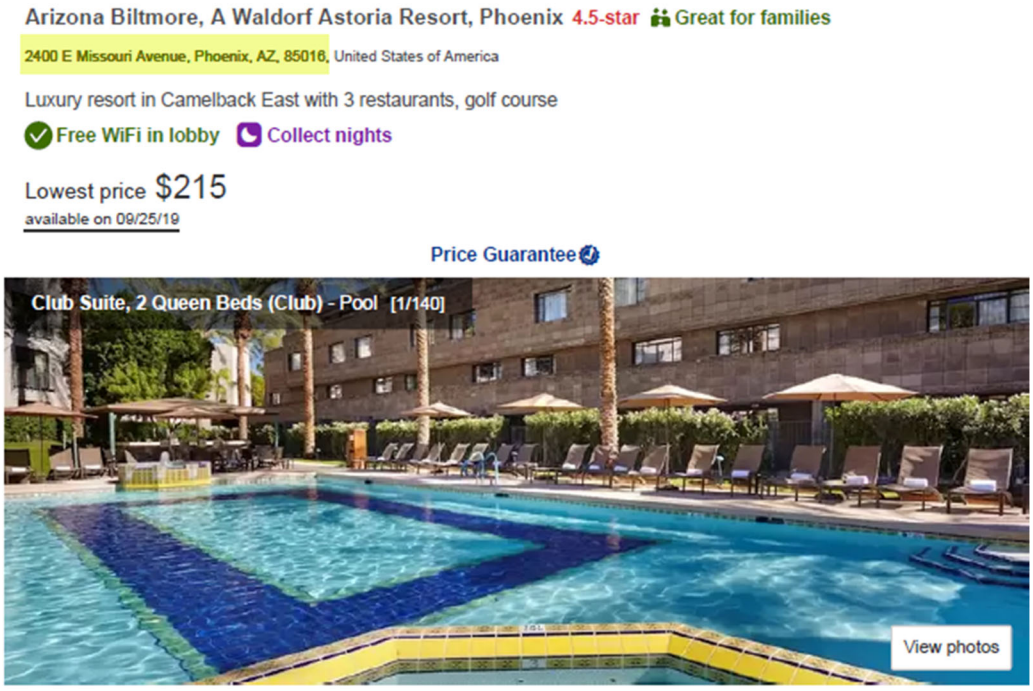
website, www.hotels.com, are regular and established places of business in the District of Arizona.

81. Hotels.com "engage[s] in the business of operating a hotel" in the District of Arizona. *City of Phoenix v. Orbitz Worldwide Inc.*, No. CV-18-0275-PR, 2019 WL 4256211, at *1, *4 (Ariz. Sept. 9, 2019).

82. As one example, Hotels.com's website offers rooms for rent at the Arizona Biltmore Hotel, located at 2400 E Missouri Avenue, Phoenix, AZ 85016.

83. Through its website, www.hotels.com, Hotels.com transacts business in hotels in Arizona, including, for example, the Arizona Biltmore Hotel.

84. The Arizona Biltmore Hotel is a physical place in the District of Arizona.



https://www.hotels.com/ho105306/arizona-biltmore-a-waldorf-astoria-resort-phoenix-united-states-of-america/

85. The Arizona Biltmore Hotel is a regular and established place of business in Arizona.

86. Hotels.com has offered rooms at the Arizona Biltmore Hotel to consumers since at least December 21, 2016

https://www.hotels.com/ho105306/arizona-biltmore-a-waldorf-astoria-resort-phoenix-united-states-of-america/

87. Hotels.com presently offers rooms for rent at the Arizona Biltmore Hotel, and has done so continuously since at least December 21, 2016.

88. At least by operating as a broker of rooms at the Arizona Biltmore Hotel, that hotel is the "place" of Hotels.com.

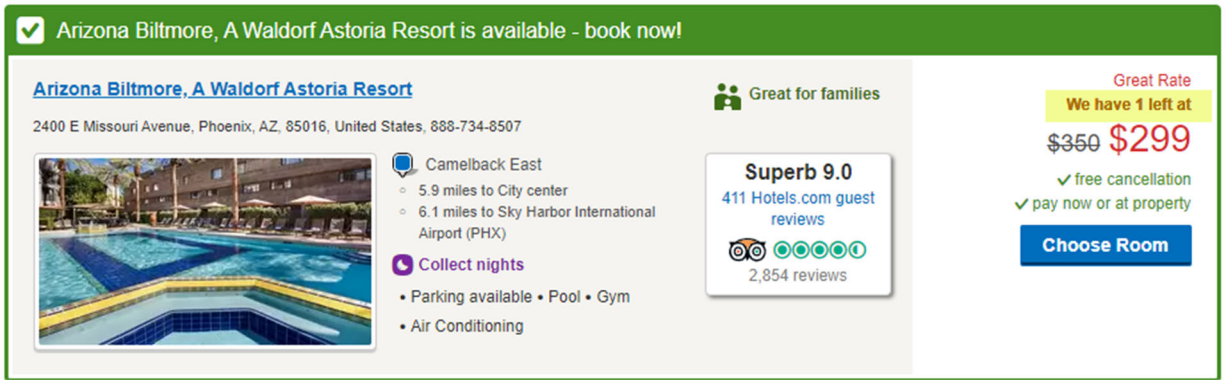
89. When a customer books a stay at the Arizona Biltmore Hotel on Hotels.com, Hotels.com sets the price that customer will pay.

90. Hotels.com may refrain from offering travel or destination products, such as hotel rooms offered to travelers in Arizona, through its service in its sole discretion, as detailed in Hotels.com's Supply Agreement, which may be found at https://join.localexpertpartnercentral.com/terms.

91. As explained in its supplier agreement, Hotels.com dictates the manner in which its hotel partners, or suppliers, treat customers.

92. For example, Hotels.com requires that "Supplier[s] will treat all Customers in a nondiscriminatory manner and in the same manner as Supplier treats its other customers. In an effort to ensure complete Customer satisfaction, Expedia [and entities under common control with Expedia, Inc.] will work in good faith with Supplier to evaluate and resolve each Customer complaint on a case-by-case basis."

93. Hotels.com suggests or has suggested to customers that the rooms being offered to customers, such as those at the Arizona Biltmore Hotel, are its own.



https://www.hotels.com/ho105306/arizona-biltmore-a-waldorf-astoria-resort-phoenix-united-states-of-america/

94. On information and belief, Hotels.com's contracts with some Arizona hotels provide Hotels.com with the right to hire and terminate certain hotel employees.

95. Hotels.com petitioned the Supreme Court of Arizona to clarify "the rights and expectations of those [like itself] doing business in Arizona."

96. Hotels.com boasts that it and other online travel companies facilitate travel "worth hundreds of millions—even billions—of dollars to Arizona's economy."

97. The Arizona Supreme Court held that Hotels.com is engaged or continuing in business in taxable activities in Arizona, including the operation of a hotel.

98. Venue is also proper as to Hotels.com because Hotels.com has committed acts of infringement in the District and has a regular and established place of business in the state of Arizona, at least through Hotels.com's servers related to www.hotels.com and the associated mobile applications located in Chandler, Arizona at the Chandler Data Center and in Phoenix, AZ at the Phoenix Data Center.[17] On information and belief, Hotels.com owns and operates the servers related to www.hotels.com and the associated mobile applications located in the Chandler Data Center and the Phoenix Data Center. The Chandler Data Center and the Phoenix Data Center are established places of business of Hotels.com.

[17] *See* Declaration of Michael Marron In Support of Defendants' Motion To Dismiss Under Rule 12(b)(3) and Rule 12(b)(6) ¶ 10, *Int'l Business Machines Corp. v. Expedia, Inc.*, Case No. 1:17-cv-01875-LPS-CJB (D. Del. May 29, 2018) (D.I. 25).

99. The Maricopa County Treasurer's Office lists Hotels.com on tax records associated with the Chandler Data Center, and those tax records reflect that Hotels.com or has paid the taxes due on servers at the Chandler Data Center property from 2014 to 2017. A copy of the Maricopa County Treasurer's Office tax history for Hotels.com for the Chandler Data Center (from 2013 through 2018) can be found at http://treasurer.maricopa.gov/parcel/Summary.aspx?List=All.

100. On information and belief, Hotels.com leases the Chandler Data Center space from Digital Realty Trust, Inc. For instance, the Chandler Data Center at 2121 S. Price Rd. #011, Chandler, Arizona 85286 is branded as "Digital Realty Data Center Solutions." On information and belief, Hotels.com leases/rents the Chandler Data Center space from Digital Realty Trust, Inc. and exercises complete control of the space that it leases/rents. On information and belief, to the extent that Hotels.com does not lease the Chandler Data Center space from Digital Realty Trust, Inc., Hotels.com leases, rents, or obtains space in the Chandler Data Center from Expedia and exercises complete control of the space that it leases or rents.

101. Hotels.com occupies space in the Chandler Data Center.

102. Hotels.com leases, rents, or sub-leases space in the Chandler Data Center.

103. Hotels.com exercises control over the space that it leases, rents, or sub-leases in the Chandler Data Center.

104. Hotels.com owns servers in the Chandler Data Center.

105. Hotels.com operates servers in the Chandler Data Center.

106. Hotels.com transacts business on servers located in the Chandler Data Center.

107. On information and belief, to the extent that Hotels.com does not operate the servers located in the Chandler Data Center, Expedia operates the servers located at the Chandler Data Center on behalf of Hotels.com

108. On information and belief, agreements exist obligating Expedia to operate servers on behalf of Hotels.com at the Chandler Data Center in order to run the website

www.hotels.com and the associated mobile application.

109. On information and belief, Hotels.com leases the Phoenix Data Center space from Iron Mountain. For instance, the Phoenix Data Center at 615 N 48th St, Phoenix AZ 85008 is marked as an Iron Mountain Data Center. On information and belief, Hotels.com leases/rents the Phoenix Data Center space from Iron Mountain and exercises complete control of the space that it leases/rents. On information and belief, to the extent that Hotels.com does not lease the Phoenix Data Center space from Iron Mountain, Hotels.com leases, rents, or obtains space in the Phoenix Data center from Expedia and exercises complete control of the space that it leases or rents.

110. Hotels.com occupies space in the Phoenix Data Center.

111. Hotels.com leases, rents, or sub-leases space in the Phoenix Data Center.

112. Hotels.com exercises control over the space that it leases, rents, or sub-leases in the Phoenix Data Center.

113. Hotels.com owns servers in the Phoenix Data Center.

114. Hotels.com operates servers in the Phoenix Data Center.

115. Hotels.com transacts business on servers located in the Phoenix Data Center.

116. On information and belief, to the extent, Hotels.com does not operate the servers located in the Phoenix Data Center, Expedia operates the servers located at the Phoenix Data Center on behalf of Hotels.com

117. On information and belief, agreements exist obligating Expedia to operate servers at the Phoenix Data Center on behalf of Hotels.com in order to run the website www.hotels.com and the associated mobile application.

118. Employees of Hotels.com operate and offer the website www.hotels.com and the associated mobile applications through the servers at the Chandler Data Center and Phoenix Data Center. Further, on information and belief, employees of Hotels.com, together with Expedia, run, operate, and maintain the servers at the Chandler Data Center and Phoenix Data Center.

119. Server systems associated with the website www.hotels.com are located in the Chandler Data Center.

120. Server systems associated with the website www.hotels.com are located in the Phoenix Data Center.

121. Hotels.com has full-time employees who are responsible for the server systems associated with the website www.hotels.com, including those servers physically located in Arizona.

122. To the extent employees of Hotels.com do not operate and offer the website www.hotels.com and the associated mobile applications through the shared servers at the Chandler Data Center and Phoenix Data Center, then on information and belief Expedia and its employees act as agents of Hotels.com to offer and operate the website www.hotels.com and the associated mobile applications through the shared servers at the Chandler Data Center and Phoenix Data Center. For example, individuals on the professional social networking website LinkedIn hold themselves out on their profiles as current employees of Expedia, Inc. in Phoenix, Arizona, with job titles such as system administrator. The job duties of these Expedia employees include maintaining "a multi-billion dollar infrastructure for one of the world's leading travel companies including ***Hotels.com***, Expedia.com, Hotwire.com . . . and more."

123. Venue is proper as to Hotwire because Hotwire has committed acts of infringement in the District and has a regular and established place of business in the state of Arizona, by operating as brokers that engage in the business of operating hotels in Arizona.

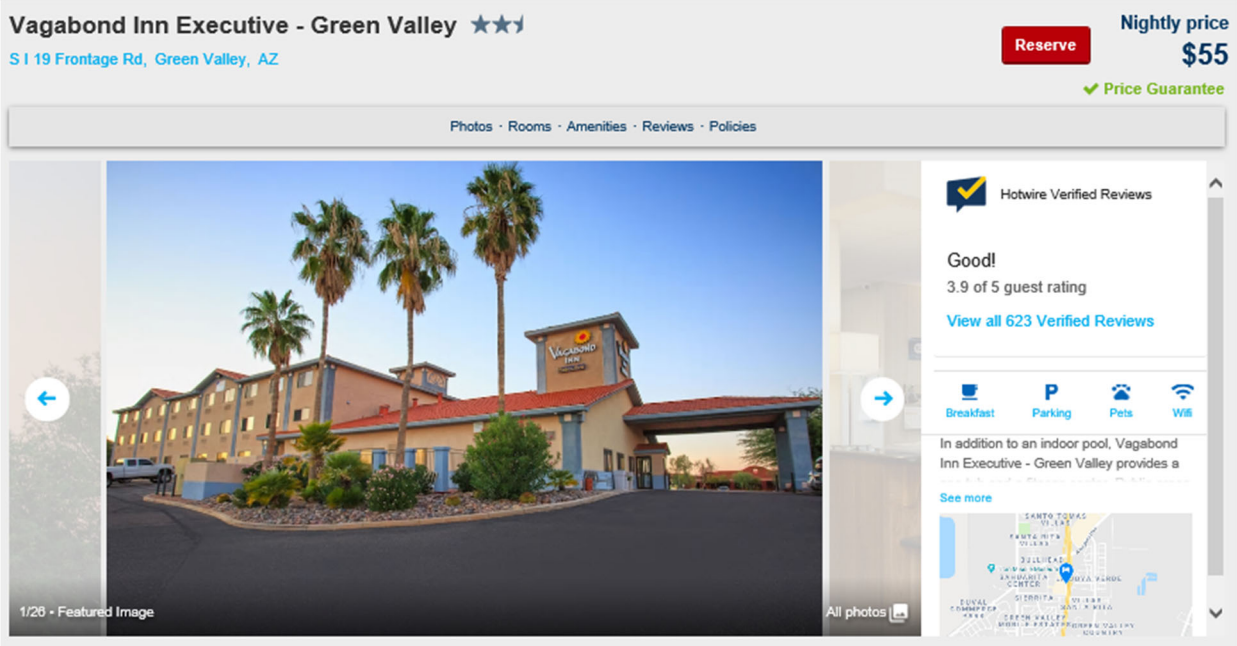
124. The various hotels in Arizona in which Hotwire offers rooms for sale on its website, www.hotwire.com, are regular and established places of business in the District of Arizona.

125. Hotwire "engage[s] in the business of operating a hotel" in the District of Arizona. *City of Phoenix v. Orbitz Worldwide Inc.*, No. CV-18-0275-PR, 2019 WL 4256211, at *1, *4 (Ariz. Sept. 9, 2019).

126. As one example, Hotwire's website offers rooms for rent at the Vagabond Inn Executive, located at S 1-19 Frontage Rd, Green Valley, AZ, 85614.

127. Through its website, www.hotwire.com, Hotwire transacts business in hotels in Arizona, including, for example, the Vagabond Inn Executive.

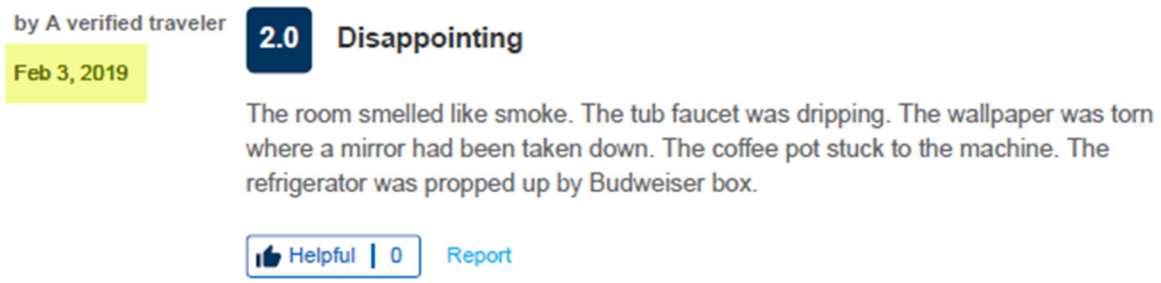
128. The Vagabond Inn Executive is a physical place in the District of Arizona.



https://www.hotwire.com

129. The Vagabond Inn Executive is a regular and established place of business in Arizona.

130. Hotwire has offered rooms at the Vagabond Inn Executive to consumers since at least February 3, 2019.



https://www.hotwire.com

131. Hotwire presently offers rooms for rent at the Vagabond Inn Executive, and

has done so continuously since at least February 3, 2019.

132. At least by operating as a broker of rooms at the Vagabond Inn Executive, that hotel is the "place" of Hotwire.

133. When a customer books a stay at the Vagabond Inn Executive on Hotwire, Hotwire sets the price that customer will pay.

134. Hotwire may refrain from offering travel or destination products, such as hotel rooms offered to travelers in Arizona, through its service in its sole discretion, as detailed in Hotwire's Supply Agreement, which may be found at https://join.localexpertpartnercentral.com/terms.

135. As explained in its supplier agreement, Hotwire dictates the manner in which its hotel partners, or suppliers, treat customers.

136. For example, Hotwire requires that "Supplier[s] will treat all Customers in a nondiscriminatory manner and in the same manner as Supplier treats its other customers. In an effort to ensure complete Customer satisfaction, Expedia [and entities under common control with Expedia, Inc.] will work in good faith with Supplier to evaluate and resolve each Customer complaint on a case-by-case basis."

137. On information and belief, Hotwire's contracts with some Arizona hotels provide Hotwire with the right to hire and terminate certain hotel employees.

138. Hotwire petitioned the Supreme Court of Arizona to clarify "the rights and expectations of those [like itself] doing business in Arizona."

139. Hotwire boasts that it and other online travel companies facilitate travel "worth hundreds of millions—even billions—of dollars to Arizona's economy."

140. The Arizona Supreme Court held that Hotwire is engaged or continuing in business in taxable activities in Arizona, including the operation of a hotel.

141. Venue is also proper as to Hotwire because Hotwire has committed acts of infringement in the District and has a regular and established place of business in the state of Arizona, at least through Hotwire's servers related to www.hotwire.com and the associated mobile applications located in Chandler, Arizona at the Chandler Data Center

and in Phoenix, AZ at the Phoenix Data Center.[18] On information and belief, Hotwire owns and operates the servers related to www.hotwire.com and the associated mobile applications located in the Chandler Data Center and the Phoenix Data Center. The Chandler Data Center and the Phoenix Data Center are established places of business of Hotwire.

142. On information and belief, Hotwire leases the Chandler Data Center space from Digital Realty Trust, Inc. For instance, the Chandler Data Center at 2121 S. Price Rd. #011, Chandler, Arizona 85286 is branded as "Digital Realty Data Center Solutions." On information and belief, Hotwire leases/rents the Chandler Data Center space from Digital Realty Trust, Inc. and exercises complete control of the space that it leases/rents. On information and belief, to the extent that Hotwire does not lease the Chandler Data Center space from Digital Realty Trust, Inc., Hotwire leases, rents, or obtains space in the Chandler Data Center from Expedia and exercises complete control of the space that it leases or rents.

143. Hotwire occupies space in the Chandler Data Center.

144. Hotwire leases, rents, or sub-leases space in the Chandler Data Center.

145. Hotwire exercises control over the space that it leases, rents, or sub-leases in the Chandler Data Center.

146. Hotwire owns servers in the Chandler Data Center.

147. Hotwire operates servers in the Chandler Data Center.

148. Hotwire transacts business on servers located in the Chandler Data Center.

149. On information and belief, to the extent that Hotwire does not operate the servers located in the Chandler Data Center, Expedia operates the servers located at the Chandler Data Center on behalf of Hotwire.

150. On information and belief, agreements exist obligating Expedia to operate servers on behalf of Hotwire at the Chandler Data Center in order to run the website

[18] *See* Declaration of Michael Marron In Support of Defendants' Motion To Dismiss Under Rule 12(b)(3) and Rule 12(b)(6) ¶ 14, *Int'l Business Machines Corp. v. Expedia, Inc.*, Case No. 1:17-cv-01875-LPS-CJB (D. Del. May 29, 2018) (D.I. 25).

www.hotwire.com and the associated mobile application.

151. For example, Hotwire's website operates, in part, on the Expedia BEX platform. Hotwire regularly interacts with Expedia, including with employees who work at the Chandler Data Center, in order to operate www.hotwire.com.

152. On information and belief, Hotwire leases the Phoenix Data Center space from Iron Mountain. For instance, the Phoenix Data Center at 615 N 48th St, Phoenix AZ 85008 is marked as an Iron Mountain Data Center. On information and belief, Hotwire leases/rents the Phoenix Data Center space from Iron Mountain and exercises complete control of the space that it leases/rents. On information and belief, to the extent that Hotwire does not lease the Phoenix Data Center space from Iron Mountain, Hotwire leases, rents, or obtains space in the Phoenix Data center from Expedia and exercises complete control of the space that it leases or rents.

153. Hotwire occupies space in the Phoenix Data Center.

154. Hotwire leases, rents, or sub-leases space in the Phoenix Data Center.

155. Hotwire exercises control over the space that it leases, rents, or sub-leases in the Phoenix Data Center.

156. Hotwire owns servers in the Phoenix Data Center.

157. Hotwire operates servers in the Phoenix Data Center.

158. Hotwire transacts business on servers located in the Phoenix Data Center.

159. On information and belief, to the extent that Hotwire does not operate the servers located in the Phoenix Data Center, Expedia operates the servers located at the Phoenix Data Center on behalf of Hotwire.

160. On information and belief, agreements exist obligating Expedia to operate servers at the Phoenix Data Center on behalf of Hotwire in order to run the website www.hotwire.com and the associated mobile application.

161. For example, Hotwire's website operates, in part, on the Expedia BEX platform. Hotwire regularly interacts with Expedia, including with employees who work at the Phoenix Data Center, in order to operate www.hotwire.com.

162. On information and belief, employees of Hotwire operate and offer the website www.hotwire.com and the associated mobile applications through the servers at the Chandler Data Center and Phoenix Data Center. Further, on information and belief, employees of Hotwire, together with Expedia, run, operate, and maintain the servers at the Chandler Data Center and Phoenix Data Center.

163. Server systems associated with the website www.hotwire.com are located in the Chandler Data Center.

164. Server systems associated with the website www.hotwire.com are located in the Phoenix Data Center.

165. Hotwire has full-time employees who are responsible for the server systems associated with the website www.hotwire.com, including those servers physically located in Arizona.

166. To the extent employees of Hotwire do not operate and offer the website www.hotwire.com and the associated mobile applications through the shared servers at the Chandler Data Center and Phoenix Data Center, then on information and belief, employees of Expedia act as agents of Hotwire to offer and operate the website www.hotwire.com and the associated mobile applications through the shared servers at the Chandler Data Center and Phoenix Data Center. For example, individuals on the professional social networking website LinkedIn hold themselves out on their profiles as current employees of Expedia, Inc. Phoenix, Arizona, with job titles such as system administrator. The job duties of these Expedia employees include maintaining "a multi-billion dollar infrastructure for one of the world's leading travel companies including Hotels.com, Expedia.com, ***Hotwire.com*** . . . and more."

167. Venue is proper as to Orbitz because Orbitz has committed acts of infringement in the District and has a regular and established place of business in the state of Arizona, by operating as brokers that engage in the business of operating hotels in Arizona.

168. The various hotels in Arizona in which Orbitz offers rooms for sale on its

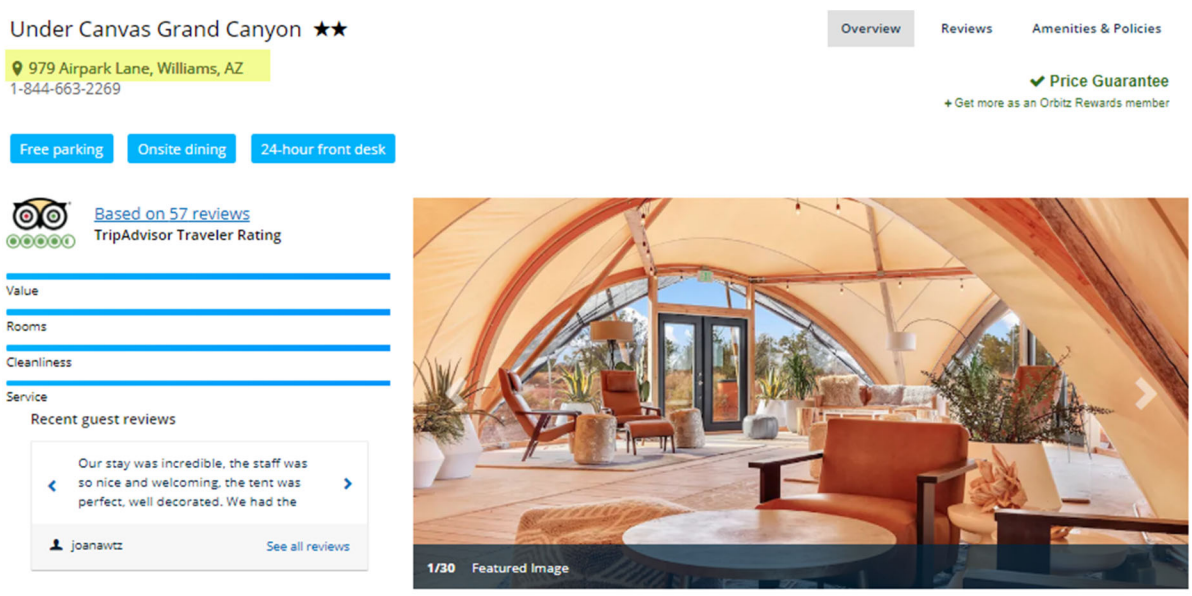
website, www.orbitz.com, are regular and established places of business in the District of Arizona.

169. Orbitz "engage[s] in the business of operating a hotel" in the District of Arizona. *City of Phoenix v. Orbitz Worldwide Inc.*, No. CV-18-0275-PR, 2019 WL 4256211, at *1, *4 (Ariz. Sept. 9, 2019).

170. As one example, Orbitz's website offers rooms for rent at the Under Canvas Grand Canyon, located at 979 Airpark Lane, Williams, AZ, 86046.

171. Through its website, www.orbitz.com, Orbitz transacts business in hotels in Arizona, including, for example, the Under Canvas Grand Canyon.

172. The Under Canvas Grand Canyon is a physical place in the District of Arizona.



https://www.orbitz.com/Grand-Canyon-Hotels-Under-Canvas-Grand-Canyon.h14861585.Hotel-Information

173. The Under Canvas Grand Canyon is a regular and established place of business in Arizona.

174. Orbitz has offered rooms at the Under Canvas Grand Canyon to consumers since at least September 17, 2018.


5/5 Excellent

Beenish

Sep 17, 2018

Thumbs up, Perfect and Amazing.

This place is amazing and perfect in many ways, Loved my stay there, Staff is beyond helpful, amazing and very caring. I will definitely recommend this for the out doors lovers to experience this as it gives both the comfort of indoors and outdoors. Food and room service was on point.

Stayed 2 nights in Sep 2018

0

https://www.orbitz.com

175. Orbitz presently offers rooms for rent at the Under Canvas Grand Canyon, and has done so continuously since at least September 17, 2018.

176. At least by operating as a broker of rooms at the Under Canvas Grand Canyon, that hotel is the "place" of Orbitz.

177. When a customer books a stay at the Under Canvas Grand Canyon on Orbitz, Orbitz sets the price that customer will pay.

178. Orbitz may refrain from offering travel or destination products, such as hotel rooms offered to travelers in Arizona, through its service in its sole discretion, as detailed in Orbitz's Supply Agreement, which may be found at https://join.localexpertpartnercentral.com/terms.

179. As explained in its supplier agreement, Orbitz dictates the manner in which its hotel partners, or suppliers, treat customers.

180. For example, Orbitz requires that "Supplier[s] will treat all Customers in a nondiscriminatory manner and in the same manner as Supplier treats its other customers. In an effort to ensure complete Customer satisfaction, Expedia [and entities under common control with Expedia, Inc.] will work in good faith with Supplier to evaluate and resolve each Customer complaint on a case-by-case basis."

181. Orbitz suggests or has suggested to customers that the rooms being offered to customers, such as those at the Under Canvas Grand Canyon, are its own.

https://www.orbitz.com

182. On information and belief, Orbitz's contracts with some Arizona hotels provide Orbitz with the right to hire and terminate certain hotel employees.

183. Orbitz petitioned the Supreme Court of Arizona to clarify "the rights and expectations of those [like itself] doing business in Arizona."

184. Orbitz boasts that it and other online travel companies facilitate travel "worth hundreds of millions—even billions—of dollars to Arizona's economy."

185. The Arizona Supreme Court held that Orbitz is engaged or continuing in business in taxable activities in Arizona, including the operation of a hotel.

186. Venue is also proper as to Orbitz because Orbitz has committed acts of infringement in the District and has a regular and established place of business in the state of Arizona, at least through Orbitz's servers related to www.orbitz.com and the associated mobile applications located in Chandler, Arizona at the Chandler Data Center and in Phoenix, AZ at the Phoenix Data Center.[19]

187. On information and belief, Orbitz owns and operates the servers related to www.orbitz.com and the associated mobile applications located in the Chandler Data Center and the Phoenix Data Center. The Chandler Data Center and the Phoenix Data Center are established places of business of Orbitz.

188. The Maricopa County Treasurer's Office lists Orbitz Worldwide as the recipient of a tax records associated with the Phoenix Data Center. On information and belief, the Maricopa County Treasurer's Office tax records for the Phoenix Data Center identifying Orbitz Worldwide as a recipient of tax records associated with the Phoenix

[19] *Id.* at ¶ 13.

Data Center are a result of Orbitz, LLC's ownership and operation of the servers related to www.orbitz.com and the associated mobile applications located in the Phoenix Data Center. On information and belief, Orbitz Worldwide acts as an agent of Orbitz, LLC in filing and paying any applicable taxes on behalf of Orbitz, LLC as a result of Orbitz, LLC's ownership and operation of the servers related to www.orbitz.com and the associated mobile applications located in the Phoenix Data Center. A copy of the Maricopa County Treasurer's Office tax history for Orbitz for the Phoenix Data Center can be found at http://treasurer.maricopa.gov/parcel/Summary.aspx?List=All. A copy of the Maricopa County Treasurer's Office 2018 tax details for Orbitz for the Phoenix Data Center can be found at http://treasurer.maricopa.gov/parcel/TaxDetails.aspx?taxyear=2018.

189. On information and belief, Orbitz (or its parent company on behalf of Orbitz) leases the Chandler Data Center space from Digital Realty Trust, Inc. For instance, the Chandler Data Center at 2121 S. Price Rd. #011, Chandler, Arizona 85286 is branded as "Digital Realty Data Center Solutions." On information and belief, Orbitz (or its parent company on behalf of Orbitz) leases/rents the Chandler Data Center space from Digital Realty Trust, Inc. and exercises complete control of the space that it leases/rents. On information and belief, to the extent that Orbitz (or its parent company on behalf of Orbitz) does not lease the Chandler Data Center space from Digital Realty Trust, Inc., Orbitz (or its parent company on behalf of Orbitz) leases, rents, or obtains space in the Chandler Data Center from Expedia and exercises complete control of the space that it leases or rents.

190. Orbitz occupies space in the Chandler Data Center.

191. Orbitz leases, rents, or sub-leases space in the Chandler Data Center.

192. Orbitz exercises control over the space that it leases, rents, or sub-leases in the Chandler Data Center.

193. Orbitz owns servers in the Chandler Data Center.

194. Orbitz operates servers in the Chandler Data Center.

195. Orbitz transacts business on servers located in the Chandler Data Center.

196. On information and belief, to the extent that Orbitz does not operate the servers located in the Chandler Data Center, Expedia operates the servers located at the Chandler Data Center on behalf of Orbitz.

197. On information and belief, agreements exist obligating Expedia to operate servers on behalf of Orbitz at the Chandler Data Center in order to run the website www.orbitz.com and the associated mobile application.

198. For example, Orbitz's website operates, in part, on the Expedia BEX platform. Orbitz regularly interacts with Expedia, including with employees who work at the Chandler Data Center, in order to operate www.orbitz.com.

199. On information and belief, Orbitz (or its parent company on behalf of Orbitz) leases the Phoenix Data Center space from Iron Mountain. For instance, the Phoenix Data Center at 615 N 48th St, Phoenix AZ 85008 is marked as an Iron Mountain Data Center. On information and belief, Orbitz (or its parent company on behalf of Orbitz) leases/rents the Phoenix Data Center space from Iron Mountain and exercises complete control of the space that it leases/rents. To the extent Orbitz does not own or lease the space from Iron Mountain, then on information and belief, Orbitz's parent company acts as an agent on behalf of Orbitz, on instructions from Orbitz, and allows Orbitz to use the space from Iron Mountain as if Orbitz owned, leased, or rented the space itself. On information and belief, to the extent that Orbitz (or its parent company on behalf of Orbitz) does not lease the Phoenix Data Center space from Iron Mountain, Orbitz (or its parent company on behalf of Orbitz) leases, rents, or obtains space in the Phoenix Data center from Expedia and exercises complete control of the space that it leases or rents.

200. Orbitz occupies space in the Phoenix Data Center.

201. Orbitz leases, rents, or sub-leases space in the Phoenix Data Center.

202. Orbitz exercises control over the space that it leases, rents, or sub-leases in the Phoenix Data Center.

203. Orbitz owns servers in the Phoenix Data Center.

204. Orbitz operates servers in the Phoenix Data Center.

205. Orbitz transacts business on servers located in the Phoenix Data Center.

206. On information and belief, to the extent that Orbitz does not operate the servers located in the Phoenix Data Center, Expedia operates the servers located at the Phoenix Data Center on behalf of Orbitz.

207. On information and belief, agreements exist obligating Expedia to operate servers on behalf of Orbitz at the Phoenix Data Center in order to run the website www.orbitz.com and the associated mobile application.

208. For example, Orbitz's website operates, in part, on the Expedia BEX platform. Orbitz regularly interacts with Expedia, including with employees who work at the Chandler Data Center, in order to operate www.orbitz.com.

209. On information and belief, employees of Orbitz operate and offer the website www.orbitz.com and the associated mobile applications through the servers at the Chandler Data Center and Phoenix Data Center. Further, on information and belief, employees of Orbitz, together with Expedia, run, operate, and maintain the servers at the Chandler Data Center and Phoenix Data Center.

210. Server systems associated with the website www.orbitz.com are located in the Chandler Data Center.

211. Server systems associated with the website www.orbitz.com are located in the Phoenix Data Center.

212. Orbitz has full-time employees who are responsible for the server systems associated with the website www.orbitz.com, including those servers physically located in Arizona.

213. To the extent employees of Orbitz do not operate and offer the website www.orbitz.com and the associated mobile applications through the shared servers at the Chandler Data Center and Phoenix Data Center, on information and belief, employees of Expedia act as agents of Orbitz to offer and operate the website www.orbitz.com and the associated mobile applications through the shared servers at the Chandler Data Center and

Phoenix Data Center.

214. Personal jurisdiction exists over Defendants because each Defendant conducts business in Arizona, by at least offering for sale and selling products and services through its websites and mobile applications, which are accessible in Arizona, and because infringement has occurred and continues to occur in Arizona.

COUNT ONE

INFRINGEMENT OF THE '440 PATENT

215. IBM incorporates by reference paragraphs 1-214.

216. IBM is the owner of all right, title and interest in the '440 patent. The '440 patent was duly and properly issued by the USPTO on July 13, 2010. The '440 patent is a reissue application of U.S. Patent No. 7,216,149, which was duly and properly issued by the USPTO on May 8, 2007. The '440 patent was duly assigned to IBM. A copy of the '440 patent is attached hereto as **Exhibit A**.

217. In violation of 35 U.S.C. § 271, Expedia and the subsidiaries it controls have infringed, contributed to the infringement of, and/or induced others to infringe one or more of the claims of the '440 patent by having made, designed, offered for sale, sold, provided, used, maintained, and/or supported their websites, including www.expedia.com, www.travelocity.com, www.hotels.com, www.hotwire.com, and www.orbitz.com and the Expedia, Travelocity, Hotels.com, Hotwire, and Orbitz mobile applications running on, for example, Apple iOS and Google Android operating systems. Defendants' infringement is continuing.

218. As outlined below, on information and belief, Expedia, Hotels.com, Hotwire, and Orbitz, infringe the '440 patent.

219. Furthermore, Expedia directs and controls the other Defendants' infringement of the '440 patent. Expedia "operate[s] several technology platforms that support [Expedia's] brands. Expedia's technology platform supports [Expedia's] full-service and multi-product brands, including Brand Expedia, Orbitz . . . as well as certain parts of the Hotwire brand. The Hotels.com technology platform supports [Expedia's]

hotel-only offering, including Hotels.com . . . ."[20] Through Expedia's control of the technological platforms used in the other Defendants' websites and mobile applications, Expedia directs, controls, and causes the infringement of the '440 patent for each of the identified websites and associated mobile applications below.

220. For example, Expedia infringes because www.expedia.com and the associated mobile applications infringed at least claim 51 of the '440 patent at least by:

a. generating and storing at a server network element (such as an Expedia server) a plurality of information files (such as web pages) that are accessible to a requesting network element (such as pages or a directory of the Expedia web site), at least one of said plurality of information files including a text file (such as HTML files) and key words (such as header, metadata, link, and anchor tags in the HTML file) and a small image object request (such as a single pixel GIF indicated by a "1x1.gif" in a request with a cache-control header in the response indicating "no-cache, no-store"), said one of said plurality of information files being capable of being interpreted by the requesting network element to display the information requested (such as a web page);

b. receiving the small image object request (such as the "1x1.gif" file) from the requesting element over the communications network, and

c. reading and storing enriched activity data contained in the received small image object request at the server network element (such as data contained in the single pixel GIF request).

221. For example, Expedia infringes because www.travelocity.com and the associated mobile applications infringed at least claim 51 of the '440 patent at least by:

a. generating and storing at a server network element (such as an Travelocity server) a plurality of information files (such as web pages) that are accessible to a requesting network element (such as pages or a directory of the Travelocity web site), at least one of said plurality of information files including a text file (such as HTML files) and key words (such as header, metadata, link, and anchor tags in the HTML file) and a

[20] Expedia Group's 2018 Form 10-K at 7.

small image object request (such as a single pixel GIF indicated by a "1x1.gif" in a request with a cache-control header in the response indicating "no-cache, no-store"), said one of said plurality of information files being capable of being interpreted by the requesting network element to display the information requested (such as a web page);

b. receiving the small image object request (such as the "1x1.gif" file) from the requesting element over the communications network, and

c. reading and storing enriched activity data contained in the received small image object request at the server network element (such as data contained in the single pixel GIF request).

222. For example, Hotels.com infringes because www.hotels.com and the associated mobile applications infringed at least claim 51 of the '440 patent at least by:

a. generating and storing at a server network element (such as an Hotels.com server) a plurality of information files (such as web pages) that are accessible to a requesting network element (such as pages or a directory of the Hotels.com web site), at least one of said plurality of information files including a text file (such as HTML files) and key words (such as header, metadata, link, and anchor tags in the HTML file) and a small image object request (such as a single pixel GIF indicated by a "1x1.gif" in a request with a cache-control header in the response indicating "no-cache, no-store"), said one of said plurality of information files being capable of being interpreted by the requesting network element to display the information requested (such as a web page);

b. receiving the small image object request (such as the "1x1.gif" file) from the requesting element over the communications network, and

c. reading and storing enriched activity data contained in the received small image object request at the server network element (such as data contained in the single pixel GIF request).

223. For example, Hotwire infringes because www.hotwire.com and the associated mobile applications infringed at least claim 51 of the '440 patent at least by:

a. generating and storing at a server network element (such as an

Hotwire server) a plurality of information files (such as web pages) that are accessible to a requesting network element (such as pages or a directory of the Hotels.com web site), at least one of said plurality of information files including a text file (such as HTML files) and key words (such as header, metadata, link, and anchor tags in the HTML file) and a small image object request (such as a single pixel GIF indicated by a "1x1.gif" in a request with a cache-control header in the response indicating "no-cache, no-store"), said one of said plurality of information files being capable of being interpreted by the requesting network element to display the information requested (such as a web page);

b. receiving the small image object request (such as the "1x1.gif" file) from the requesting element over the communications network, and

c. reading and storing enriched activity data contained in the received small image object request at the server network element (such as data contained in the single pixel GIF request).

224. For example, Orbitz infringes because www.orbitz.com and the associated mobile applications infringed at least claim 51 of the '440 patent at least by:

a. generating and storing at a server network element (such as an Orbitz server) a plurality of information files (such as web pages) that are accessible to a requesting network element (such as pages or a directory of the Hotels.com web site), at least one of said plurality of information files including a text file (such as HTML files) and key words (such as header, metadata, link, and anchor tags in the HTML file) and a small image object request (such as a single pixel GIF indicated by a "1x1.gif" in a request with a cache-control header in the response indicating "no-cache, no-store"), said one of said plurality of information files being capable of being interpreted by the requesting network element to display the information requested (such as a web page);

b. receiving the small image object request (such as the "1x1.gif" file) from the requesting element over the communications network, and

c. reading and storing enriched activity data contained in the received small image object request at the server network element (such as data contained in the

single pixel GIF request).

225. Defendants have had knowledge of the '440 patent and their alleged infringement since at least October 1, 2015. However, the Defendants have not stopped infringing.

226. On information and belief, end users and customers of www.expedia.com, www.travelocity.com, www.hotels.com, www.hotwire.com, and www.orbitz.com and the associated mobile applications directly infringe the '440 patent through the use of the websites and mobile applications to view and purchase travel listings. Expedia Group's Annual Report lists billions of dollars of revenue from its website and mobile applications. The revenue indicates that numerous end users and customers used www.expedia.com, www.travelocity.com, www.hotels.com, www.hotwire.com, and www.orbitz.com and the associated mobile application in order to view real estate listings and thereby infringe the '440 patent.

227. On information and belief, despite their knowledge of the infringement of the '440 patent, Expedia and the Expedia Subsidiaries have intended and continue to intend to induce patent infringement by third parties. For example, Expedia and the Expedia Subsidiaries have and continue to encourage and instruct customers and end users to use www.expedia.com, www.hotels.com, www.hotwire.com, and www.orbitz.com and the associated mobile applications in a manner that infringes the '440 patent by advertising the websites and mobile applications, providing customer support, and designing their website and mobile applications in such a way that the use of the website and mobile applications by an end user or customer infringes the '440 patent. For example, https://www.expedia.com/service/, https://service.hotels.com/en-us/?intlid=HOME+%3A%3A+header_help_section, https://www.orbitz.com/service/, http://helpcenter.hotwire.com/, and provide direction and support for Expedia's and the Expedia Subsidiaries' websites and associated mobile applications. On information and belief, to the extent Expedia and the Expedia Subsidiaries were not aware that they were encouraging their customers and end users to infringe the '440 patent, their lack of

knowledge was based on being willfully blind to the possibility that their acts would cause infringement.

228. On information and belief, each of the Defendants performs one or more of the claimed method steps in Arizona.

229. On information and belief, despite knowledge of the infringement of the '440 patent, Expedia and the Expedia Subsidiaries intended and continue to intend to contribute to patent infringement by third parties. For example, Expedia and the Expedia Subsidiaries provide HTML and HTTP responses, such as pixel GIF indicated by a "1x1.gif," to customers and end users in a manner that infringes the '440 patent and does not have substantial non-infringing uses.

230. IBM has been damaged by the infringement of its '440 patent by Defendants. IBM is entitled to recover from Defendants the damages sustained by IBM as a result of Defendants' wrongful acts.

231. IBM has suffered and continues to suffer irreparable harm, for which there is no adequate remedy at law, and will continue to do so unless Defendants are enjoined therefrom by this Court.

232. The infringement by Defendants of the '440 patent was deliberate and willful, entitling IBM to increased damages under 35 U.S.C. § 284 and to attorney fees and costs incurred in prosecuting this action under 35 U.S.C. § 285. In committing these acts of infringement, Defendants actually knew or should have known that their actions constituted an unjustifiably high risk of infringement of a valid and enforceable patent.

COUNT TWO

INFRINGEMENT OF THE '193 PATENT

233. IBM incorporates by reference paragraphs 1-232.

234. IBM is the owner of all right, title and interest in the '193 patent. The '193 patent was duly and properly issued by the USPTO on August 17, 2004. The '193 patent was duly assigned to IBM. A copy of the '193 patent is attached hereto as **Exhibit B**.

235. In violation of 35 U.S.C. § 271, Expedia and the subsidiaries it controls have infringed, contributed to the infringement of, and/or induced others to infringe one or more of the claims of the '193 patent by having made, designed, offered for sale, sold, provided, used, maintained, and/or supported their websites, including www.expedia.com, www.travelocity.com, www.hotels.com, www.hotwire.com, and www.orbitz.com and the associated mobile applications, including the Expedia, Travelocity, Hotels.com, Hotwire, and Orbitz applications for mobile devices running on, for example, the Apple iOS and Google Android operating systems. Defendants' infringement is continuing.

236. As outlined below, on information and belief, Expedia, Hotels.com, Hotwire, and Orbitz infringe the '193 patent.

237. Furthermore, Expedia directs and controls the other Defendants' infringement of the '193 patent. Expedia "operate[s] several technology platforms that support [Expedia's] brands. Expedia's technology platform supports [Expedia's] full-service and multi-product brands, including Brand Expedia, Orbitz . . . as well as certain parts of the Hotwire brand. The Hotels.com technology platform supports [Expedia's] hotel-only offering, including Hotels.com . . . ."[21] Through Expedia's control of the technological platforms used in the other Defendants' websites and mobile applications, Expedia directs, controls, and causes the infringement of the '193 patent for each of the identified websites and associated mobile applications below.

238. For example, Expedia infringes because www.expedia.com and Expedia mobile applications infringe at least claim 1 of the '193 patent at least by:

a. Providing a graphical user interface (such as the Expedia GUI) for a customer self service system (such as the Expedia travel web site) that performs resource search and selection (such as allowing travelers to select vacation packages, flights, hotels, rental cars, rail, cruises, activities, attractions, and services) comprising:

b. a first visual workspace (such as the initial Expedia search/query screen) comprising entry field enabling entry of a query for a resource (such as the query

[21] Expedia Group's 2018 Form 10-K at 7.

fields on the initial Expedia search/query screen) and, one or more selectable graphical user context elements (such as the search type icons on the initial Expedia search/query screen), each element representing a context associated with the current user state (such as the user contexts represented by the search type icons on the initial Expedia search/query screen) and having context attributes (such as the mode of transportation, mode of housing, preferred travel class, number of travelers, and number of rooms) and attribute values (such as the values associated with the aforementioned context attributes (e.g., flight, hotel, car, number of adults, number of rooms, economy/coach) associated therewith;

c. a second visual workspace for visualizing (such as the Expedia search results screen) the set of resources that the customer self service system has determined to match the user's query (such as each search result displayed on the search results page), said system indicating a degree of fit of said determined resources with said query (such as the sort order of the search results displayed on the search results page);

d. a third visual workspace (such as the "Change search" window accessed from the Expedia search results screen) for enabling said user to select and modify context attribute values to enable increased specificity and accuracy of a query's search parameters (such as the dropdown fields for the number of adults and/or children in each room and the seating class), said third visual workspace further enabling said user to specify resource selection parameters and relevant resource evaluation criteria utilized by (such as checkboxes for the duration of a traveler's hotel stay and/or to indicate a preference for direct flights only) a search mechanism in said system (such as the search button in the "Change search" window), said degree of fit indication based on said user's context, and said associated resource selection parameters and relevant resource evaluation criteria (such as the sort order of the search results displayed on the search results page); and,

e. a mechanism enabling said user to navigate among said first, second and third visual workspaces to thereby identify and improve selection logic and response

sets fitted to said query (such as the search button on the initial Expedia search/query screen and/or the "Change search" link in the Expedia search results screen).

239. For example, Expedia infringes because www.travelocity.com and Travelocity mobile applications infringe at least claim 1 of the '193 patent at least by:

a. Providing a graphical user interface (such as the Travelocity GUI) for a customer self service system (such as the Travelocity travel web site) that performs resource search and selection (such as allowing travelers to select vacation packages, flights, hotels, rental cars, rail, cruises, activities, attractions, and services) comprising:

b. a first visual workspace (such as the initial Travelocity search/query screen) comprising entry field enabling entry of a query for a resource (such as the query fields on the initial Travelocity search/query screen) and, one or more selectable graphical user context elements (such as the search type icons on the initial Travelocity search/query screen), each element representing a context associated with the current user state (such as the user contexts represented by the search type icons on the initial Travelocity search/query screen) and having context attributes (such as the mode of transportation, mode of housing, preferred travel class, number of travelers, and number of rooms) and attribute values (such as the values associated with the aforementioned context attributes (e.g., flight, hotel, car, number of adults, number of rooms, economy/coach)) associated therewith;

c. a second visual workspace for visualizing (such as the Travelocity search results screen) the set of resources that the customer self service system has determined to match the user's query (such as each search result displayed on the search results page), said system indicating a degree of fit of said determined resources with said query (such as the sort order of the search results displayed on the search results page);

d. a third visual workspace (such as the "Change search" window accessed from the Expedia search results screen) for enabling said user to select and modify context attribute values to enable increased specificity and accuracy of a query's search parameters (such as the dropdown fields for the number of adults and/or children

in each room and the seating class), said third visual workspace further enabling said user to specify resource selection parameters and relevant resource evaluation criteria utilized by (such as checkboxes for the duration of a traveler's hotel stay and/or to indicate a preference for direct flights only) a search mechanism in said system (such as the search button in the "Change search" window), said degree of fit indication based on said user's context, and said associated resource selection parameters and relevant resource evaluation criteria (such as the sort order of the search results displayed on the search results page); and,

e. a mechanism enabling said user to navigate among said first, second and third visual workspaces to thereby identify and improve selection logic and response sets fitted to said query (such as the search button on the initial Travelocity search/query screen and/or the "Change search" link in the Travelocity search results screen).

240. For example, Hotels.com infringes because www.hotels.com and associated mobile applications infringe at least claim 1 of the '193 patent at least by:

a. Providing a graphical user interface (such as the Hotels.com GUI) for a customer self service system (such as the Hotels.com travel web site) that performs resource search and selection (such as allowing travelers to select lodging accommodations) comprising:

b. a first visual workspace (such as the initial Hotels.com "Packages" search/query screen) comprising entry field enabling entry of a query for a resource (such as the query fields on the initial "Packages" Hotels.com search/query screen) and, one or more selectable graphical user context elements (such as the search type icons on the initial Hotels.com "Packages" search/query screen), each element representing a context associated with the current user state (such as the user contexts represented by the search type icons on the initial Hotels.com "Packages" search/query screen) and having context attributes (such as the mode of transportation, mode of housing, preferred travel class, number of travelers, and number of rooms) and attribute values (such as the values associated with the aforementioned context attributes (e.g., flight, hotel, number of adults,

number of rooms, economy/coach)) associated therewith;

c. a second visual workspace for visualizing (such as the Hotels.com search results screen) the set of resources that the customer self service system has determined to match the user's query (such as each search result displayed on the search results page), said system indicating a degree of fit of said determined resources with said query (such as the sort order of the search results displayed on the search results page);

d. a third visual workspace (such as the "Change search" window accessed from the Hotels.com search results screen) for enabling said user to select and modify context attribute values to enable increased specificity and accuracy of a query's search parameters (such as the dropdown fields for the number of adults and/or children in each room and the seating class), said third visual workspace further enabling said user to specify resource selection parameters and relevant resource evaluation criteria utilized by (such as checkboxes for the duration of a traveler's hotel stay and/or to indicate a preference for direct flights only) a search mechanism in said system (such as the search button in the "Change search" window), said degree of fit indication based on said user's context, and said associated resource selection parameters and relevant resource evaluation criteria (such as the sort order of the search results displayed on the search results page); and,

e. a mechanism enabling said user to navigate among said first, second and third visual workspaces to thereby identify and improve selection logic and response sets fitted to said query (such as the search button on the initial Hotels.com "Packages" search/query screen and/or the "Change search" link in the Hotels.com search results screen).

241. For example, Hotwire infringes because www.hotwire.com and associated mobile applications infringe at least claim 1 of the '193 patent at least by:

a. Providing a graphical user interface (such as the Hotwire GUI) for a customer self service system (such as the Hotwire travel web site) that performs resource search and selection (such as allowing travelers to select excess seats, rooms, and cars)

comprising:

b. a first visual workspace (such as the initial Hotwire search/query screen) comprising entry field enabling entry of a query for a resource (such as the query fields on the initial Hotwire search/query screen) and, one or more selectable graphical user context elements (such as the search type icons on the initial Hotwire search/query screen), each element representing a context associated with the current user state (such as the user contexts represented by the search type icons on the initial Hotwire" search/query screen) and having context attributes (such as the mode of transportation, mode of housing, number of travelers, and number of rooms) and attribute values (such as the values associated with the aforementioned context attributes (e.g., flight, hotel, car, number of adults, number of rooms, number of children)) associated therewith;

c. a second visual workspace for visualizing (such as the Hotwire search results screen) the set of resources that the customer self service system has determined to match the user's query (such as each search result displayed on the search results page), said system indicating a degree of fit of said determined resources with said query (such as the sort order of the search results displayed on the search results page);

d. a third visual workspace (such as the "Change search" window accessed from the Hotwire search results screen) for enabling said user to select and modify context attribute values to enable increased specificity and accuracy of a query's search parameters (such as the dropdown fields for the number of adults and/or children in each room and the seating class), said third visual workspace further enabling said user to specify resource selection parameters and relevant resource evaluation criteria utilized by (such as checkboxes for the duration of a traveler's hotel stay and/or to indicate a preference for direct flights only) a search mechanism in said system (such as the search button in the "Change search" window), said degree of fit indication based on said user's context, and said associated resource selection parameters and relevant resource evaluation criteria (such as the sort order of the search results displayed on the search results page); and,

e. a mechanism enabling said user to navigate among said first, second and third visual workspaces to thereby identify and improve selection logic and response sets fitted to said query (such as the search button on the initial Hotwire search/query screen and/or the "Change search" link in the Hotwire search results screen).

242. For example, Orbitz infringes because www.orbitz.com and associated mobile applications infringe at least claim 1 of the '193 patent at least by:

a. Providing a graphical user interface (such as the Orbitz GUI) for a customer self service system (such as the Orbitz travel web site) that performs resource search and selection (such as allowing travelers to select flights, hotels, and packages) comprising:

b. a first visual workspace (such as the initial Orbitz search/query screen) comprising entry field enabling entry of a query for a resource (such as the query fields on the initial Orbitz search/query screen) and, one or more selectable graphical user context elements (such as the search type icons on the initial Orbitz search/query screen), each element representing a context associated with the current user state (such as the user contexts represented by the search type icons on the initial Orbitz search/query screen) and having context attributes (such as the mode of transportation, mode of housing, preferred travel class, number of travelers, and number of rooms) and attribute values (such as the values associated with the aforementioned context attributes (e.g., flight, hotel, number of adults, number of rooms, number of children, economy/coach)) associated therewith;

c. a second visual workspace for visualizing (such as the Orbitz search results screen) the set of resources that the customer self service system has determined to match the user's query (such as each search result displayed on the search results page), said system indicating a degree of fit of said determined resources with said query (such as the sort order of the search results displayed on the search results page);

d. a third visual workspace (such as the "Change search" window accessed from the Orbitz search results screen) for enabling said user to select and modify

context attribute values to enable increased specificity and accuracy of a query's search parameters (such as the dropdown fields for the number of adults and/or children in each room and the seating class), said third visual workspace further enabling said user to specify resource selection parameters and relevant resource evaluation criteria utilized by (such as checkboxes for the duration of a traveler's hotel stay and/or to indicate a preference for direct flights only) a search mechanism in said system (such as the search button in the "Change search" window), said degree of fit indication based on said user's context, and said associated resource selection parameters and relevant resource evaluation criteria (such as the sort order of the search results displayed on the search results page); and,

e. a mechanism enabling said user to navigate among said first, second and third visual workspaces to thereby identify and improve selection logic and response sets fitted to said query (such as the search button on the initial Orbitz search/query screen and/or the "Change search" link in the Orbitz search results screen).

243. Defendants have had knowledge of the '193 patent and their alleged infringement since at least May 15, 2019. However, the Defendants have not stopped infringing.

244. On information and belief, each of the Defendants keeps and/or maintains one or more elements of the claimed interface in Arizona.

245. On information and belief, end users and customers of www.expedia.com, www.travelocity.com, www.hotels.com, www.hotwire.com, and www.orbitz.com and the associated mobile applications directly infringe the '193 patent through the use of the websites and mobile applications to view and purchase travel listings. Expedia Group's Annual Report lists billions of dollars of revenue from its website and mobile applications. The revenue indicates that numerous end users and customers used www.expedia.com, www.travelocity.com, www.hotels.com, www.hotwire.com, and www.orbitz.com and the associated mobile application in order to view real estate listings and thereby infringe the '193 patent.

246. On information and belief, Defendants have intended and continue to intend to induce patent infringement by third parties. For example, Defendants have and continue to encourage and instruct customers and end users to use www.expedia.com, www.travelocity.com, www.hotels.com, www.hotwire.com, and www.orbitz.com and the associated mobile applications in a manner that infringes the '193 patent by advertising the websites and the associated mobile applications, by providing customer support, and by designing their websites and the associated mobile applications in such a way that the use of the websites and the associated mobile applications by an end user or customer infringes the '193 patent. For example, https://www.expedia.com/service/ provides direction and support for expedia.com, https://www.travelocity.com/service/ provides direction and support for travelocity.com, https://service.hotels.com/en-us/ provides direction and support for hotels.com, http://helpcenter.hotwire.com provides direction and support for hotwire.com, and https://www.orbitz.com/service provides direction and support for orbitz.com. On information and belief, to the extent that Defendants were not aware that they were encouraging their customers and end users to infringe the '193 patent, their lack of knowledge was based on being willfully blind to the possibility that their acts would cause infringement.

247. On information and belief, Defendants have intended and continue to intend to contribute to patent infringement by third parties. For example, Defendants provide a graphical user interface for a customer self-selection system that performs resource search and selection using visual workspaces in a manner that infringes the '193 patent and does not have substantial non-infringing uses.

248. IBM has been damaged by the infringement of its '193 patent by Defendants and will continue to be damaged by such infringement. IBM is entitled to recover from Defendants the damages sustained by IBM as a result of Defendants' wrongful acts.

249. IBM has suffered and continues to suffer irreparable harm, for which there is no adequate remedy at law, and will continue to do so unless Defendants are enjoined therefrom by this Court.

250. The infringement by Defendants of the '193 patent was deliberate and willful, entitling IBM to increased damages under 35 U.S.C. § 284 and to attorney fees and costs incurred in prosecuting this action under 35 U.S.C. § 414. In committing these acts of infringement, Defendants actually knew or should have known that their actions constituted an unjustifiably high risk of infringement of a valid and enforceable patent.

COUNT THREE

INFRINGEMENT OF THE '234 PATENT

251. IBM incorporates by reference paragraphs 1-250.

252. IBM is the owner of all right, title and interest in the '234 patent. The '234 patent was duly and properly issued by the USPTO on June 2, 2009. The '234 patent was duly assigned to IBM. A copy of the '234 patent is attached hereto as **Exhibit C**.

253. In violation of 35 U.S.C. § 271, Expedia and the subsidiaries it controls have infringed, contributed to the infringement of, and/or induced others to infringe one or more of the claims of the '234 patent by having made, designed, offered for sale, sold, provided, used, maintained, and/or supported their websites, including www.expedia.com, www.travelocity.com, www.hotwire.com, www.hotels.com, and www.orbitz.com and the associated mobile applications, including the Expedia, Travelocity, Hotwire, Hotels.com, and Orbitz applications for mobile devices running on, for example, the Apple iOS and Google Android operating systems. Expedia and Defendants' infringement is continuing.

254. As outlined below, on information and belief, Expedia, Hotels.com, Hotwire, and Orbitz infringe the '234 patent.

255. Furthermore, Expedia directs and controls the other Defendants' infringement of the '234 patent. Expedia "operate[s] several technology platforms that support [Expedia's] brands. Expedia's technology platform supports [Expedia's] full-service and multi-product brands, including Brand Expedia, Orbitz . . . as well as certain parts of the Hotwire brand. The Hotels.com technology platform supports [Expedia's]

hotel-only offering, including Hotels.com . . . ."[22] Through Expedia's control of the technological platforms used in the other Defendants' websites and mobile applications, Expedia directs, controls, and causes the infringement of the '234 patent for each of the identified websites and associated mobile applications below.

256. For example, Expedia infringes because www.expedia.com and associated mobile applications infringe claim 1 of the '234 patent by, for example:

a. Generating a portal page (such as the search results page on www.expedia.com), wherein the portal page includes a plurality of portlets (such as each search result displayed on the search results page), the method comprising;

b. Determining whether a subset of portlets is stackable (such as organizing the individual search results based on featured results); and;

c. Responsive to the subset of portlets being stackable, identifying two or more stacks of portlets that are stackable (such as featured results, price, guest rating, vacation rentals, or package discounts search results), and;

d. Generating the portal page (such as the search results page on www.expedia.com) such that the two or more stacks of portlets are generated as a stack of stacks, wherein the stack of stacks presents a first stack of portlets (such as the display of search results initially presented to the user) and a control for selecting a second stack of portlets from within the two or more stacks of portlets that is not currently presented (such as providing the means for the user to select other stacks of portlets not currently presented to the user, such as featured results, price, guest rating, vacation rentals, or package discounts search results).

257. For example, Expedia infringes because www.travelocity.com and associated mobile applications infringe claim 1 of the '234 patent by, for example:

a. Generating a portal page (such as the search results page on www.travelocity.com), wherein the portal page includes a plurality of portlets (such as each search result displayed on the search results page), the method comprising;

[22] Expedia Group's 2018 Form 10-K at 7.

b. Determining whether a subset of portlets is stackable (such as organizing the individual search results based on featured results); and;

c. Responsive to the subset of portlets being stackable, identifying two or more stacks of portlets that are stackable (such as featured results, price, guest rating, vacation rentals, or package discounts search results), and;

d. Generating the portal page (such as the search results page on www.travelocity.com) such that the two or more stacks of portlets are generated as a stack of stacks, wherein the stack of stacks presents a first stack of portlets (such as the display of search results initially presented to the user) and a control for selecting a second stack of portlets from within the two or more stacks of portlets that is not currently presented (such as providing the means for the user to select other stacks of portlets not currently presented to the user, such as featured results, price, guest rating, vacation rentals, or package discounts search results).

258. For example, Hotels.com infringes because www.hotels.com and associated mobile applications infringe claim 1 of the ’234 patent by, for example:

a. Generating a portal page (such as the search results page on www.hotels.com), wherein the portal page includes a plurality of portlets (such as each search result displayed on the search results page), the method comprising;

b. Determining whether a subset of portlets is stackable (such as organizing the individual search results based on featured results); and;

c. Responsive to the subset of portlets being stackable, identifying two or more stacks of portlets that are stackable (such as featured results, star rating, distance, guest rating, or price search results), and;

d. Generating the portal page (such as the search results page on www.hotels.com) such that the two or more stacks of portlets are generated as a stack of stacks, wherein the stack of stacks presents a first stack of portlets (such as the display of search results initially presented to the user) and a control for selecting a second stack of portlets from within the two or more stacks of portlets that is not currently presented (such

as providing the means for user to select other stacks of portlets not currently presented to the user, such as featured results, star rating, distance, guest rating, or price search results).

259. For example, Hotwire infringes because www.hotwire.com and associated mobile applications infringe claim 1 of the ’234 patent by, for example:

a. Generating a portal page (such as the search results page on www.hotwire.com), wherein the portal page includes a plurality of portlets (such as each search result displayed on the search results page), the method comprising;

b. Determining whether a subset of portlets is stackable (such as organizing the individual search results based on popularity); and;

c. Responsive to the subset of portlets being stackable, identifying two or more stacks of portlets that are stackable (such as popularity, price, or hotel class search results), and;

d. Generating the portal page (such as the search results page on www.hotwire.com) such that the two or more stacks of portlets are generated as a stack of stacks, wherein the stack of stacks presents a first stack of portlets (such as the display of search results initially presented to the user) and a control for selecting a second stack of portlets from within the two or more stacks of portlets that is not currently presented (such as providing the means for the user to select other stacks of portlets not currently presented to the user, such as popularity, price, or hotel class search results).

260. For example, Orbitz infringes because www.orbitz.com and associated mobile applications infringe claim 1 of the ’234 patent by, for example:

a. Generating a portal page (such as the search results page on www.orbitz.com), wherein the portal page includes a plurality of portlets (such as each search result displayed on the search results page), the method comprising;

b. Determining whether a subset of portlets is stackable (such as organizing the individual search results based on featured results); and;

c. Responsive to the subset of portlets being stackable, identifying two or more stacks of portlets that are stackable (such as featured results, price, guest rating,

vacation rentals, or package discount search results), and;

d. Generating the portal page (such as the search results page on www.orbitz.com) such that the two or more stacks of portlets are generated as a stack of stacks, wherein the stack of stacks presents a first stack of portlets (such as the display of search results initially presented to the user) and a control for selecting a second stack of portlets from within the two or more stacks of portlets that is not currently presented (such as providing the means for the user to select other stacks of portlets not currently presented to the user, such as featured results, price, guest rating, vacation rentals, or package discount search results).

261. On information and belief, each of the Defendants performs at least one step of the claimed method in Arizona.

262. Defendants have had knowledge of the ’234 patent and their alleged infringement since at least May 15, 2019. However, the Defendants have not stopped infringing.

263. On information and belief, end users and customers of www.expedia.com, www.travelocity.com, www.hotels.com, www.hotwire.com, and www.orbitz.com and the associated mobile applications directly infringe the ’234 patent through the use of the websites and mobile applications to view and purchase travel listings. Expedia Group’s Annual Report lists billions of dollars of revenue from its website and mobile applications. The revenue indicates that numerous end users and customers used www.expedia.com, www.travelocity.com, www.hotels.com, www.hotwire.com, and www.orbitz.com and the associated mobile application in order to view real estate listings and thereby infringe the ’234 patent.

264. On information and belief, despite their knowledge of the infringement of the ’234 patent, Expedia and the Expedia Subsidiaries have intended and continue to intend to induce patent infringement by third parties. For example, Expedia and the Expedia Subsidiaries have and continue to encourage and instruct customers and end users to use www.expedia.com, www.hotels.com, www.hotwire.com, and www.orbitz.com and

the associated mobile applications in a manner that infringes the '234 patent by advertising the websites and mobile applications, providing customer support, and designing their website and mobile applications in such a way that the use of the website and mobile applications by an end user or customer infringes the '234 patent. For example, https://www.expedia.com/service/, https://service.hotels.com/en-us/?intlid=HOME+%3A%3A+header_help_section, https://www.orbitz.com/service/, http://helpcenter.hotwire.com/, and provide direction and support for Expedia's and the Expedia Subsidiaries' websites and associated mobile applications. On information and belief, to the extent Expedia and the Expedia Subsidiaries were not aware that they were encouraging their customers and end users to infringe the '234 patent, their lack of knowledge was based on being willfully blind to the possibility that their acts would cause infringement.

265. On information and belief, despite knowledge of the infringement of the '234 patent, Expedia and the Expedia Subsidiaries intended and continue to intend to contribute to patent infringement by third parties. For example, Expedia and the Expedia Subsidiaries provide search prompts that encourage a customer or end user to generate a portal page, such as a search results page, in a manner that infringes the '234 patent and does not have substantial non-infringing uses.

266. IBM has been damaged by the infringement of its '234 patent by Defendants and will continue to be damaged by such infringement. IBM is entitled to recover from Defendants the damages sustained by IBM as a result of Defendants' wrongful acts.

267. IBM has suffered and continues to suffer irreparable harm, for which there is no adequate remedy at law, and will continue to do so unless Defendants are enjoined therefrom by this Court.

268. The infringement by Defendants of the '234 patent was deliberate and willful, entitling IBM to increased damages under 35 U.S.C. § 284 and to attorney fees and costs incurred in prosecuting this action under 35 U.S.C. § 414. In committing these acts of infringement, Defendants actually knew or should have known that their actions

constituted an unjustifiably high risk of infringement of a valid and enforceable patent.

COUNT FOUR

INFRINGEMENT OF THE '348 PATENT

269. IBM incorporates by reference paragraphs 1-268.

270. IBM is the owner of all right, title and interest in the '348 patent. The '348 patent was duly and properly issued by the USPTO on November 20, 2012. The '348 patent was duly assigned to IBM. A copy of the '348 patent is attached hereto as **Exhibit D**.

271. In violation of 35 U.S.C. § 271, Expedia and the subsidiaries it controls have infringed, contributed to the infringement of, and/or induced others to infringe one or more of the claims of the '348 patent by having made, designed, offered for sale, sold, provided, used, maintained, and/or supported their websites, including www.expedia.com, www.travelocity.com, www.hotels.com, and www.orbitz.com and the associated mobile applications, including the Expedia, Travelocity, Hotels.com, and Orbitz applications for mobile devices running on, for example, the Apple iOS and Google Android operating systems. Expedia and Defendants' infringement is continuing.

272. As outlined below, on information and belief, Expedia, Hotels.com, and Orbitz infringe the '348 patent.

273. Furthermore, Expedia directs and controls the other Defendants' infringement of the '348 patent. Expedia "operate[s] several technology platforms that support [Expedia's] brands. Expedia's technology platform supports [Expedia's] full-service and multi-product brands, including Brand Expedia, Orbitz . . . as well as certain parts of the Hotwire brand. The Hotels.com technology platform supports [Expedia's] hotel-only offering, including Hotels.com . . . ." Through Expedia's control of the technological platforms used in the other Defendants' websites and mobile applications, Expedia directs, controls, and causes the infringement of the '348 patent for each of the identified websites and associated mobile applications below.

274. For example, Expedia infringes because www.expedia.com and associated

mobile applications infringe claim 13 of the ’348 patent by, for example:

a. providing a computer infrastructure being operable to: receive and process a data conglomeration request (such as a hotel search request on Google Chrome) into a data conglomeration service call (such as a service call for the hotels responsive to the search request);

b. obtain unformatted data (such as the unformatted hotel results) in response to the data conglomeration service call;

c. utilize a set of JavaScript objects (such as a JSON) to represent the data as JavaScript data (such as using a JSON to represent the hotel search results);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"type": "HotelViewModel",
"hotelId": 2635458,
"hotelName": "The Inn at Virginia Mason",
"shortlistModel": {
 "favorited": false,
 "saveUrl": "/api/ucs/shortlist/save/2635458",
 "removeUrl": "/api/ucs/shortlist/remove/2635458",
 "meta": {
  "hotelId": "2635458",
  "chkIn": "20190911",
  "chkOut": "20190912",
  "roomConfiguration": "2"
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},
"displayPrice": "$170",
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"longitude": "-122.326637",
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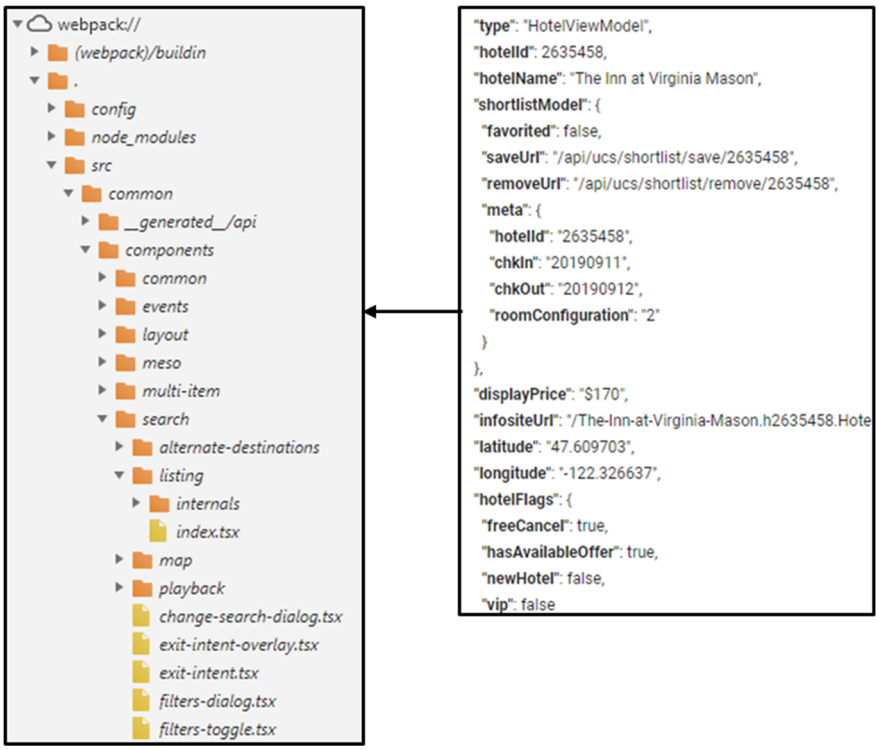
 "freeCancel": true,
 "hasAvailableOffer": true,
 "newHotel": false,
 "vip": false
```


https://www.expedia.com/Hotel-Search . . ., Google Chrome

d. format the set of JavaScript objects (such as the JSON representing the hotel search results) using a set of JavaScript functions (such as the JavaScript functions like those in the webpack);

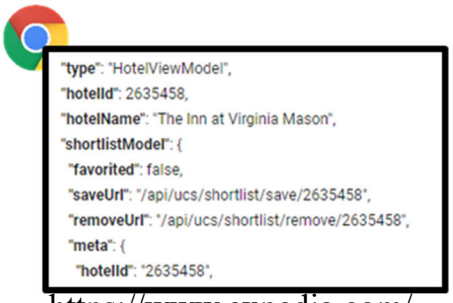


https://www.expedia.com/Hotel-Search . . ., Google Chrome

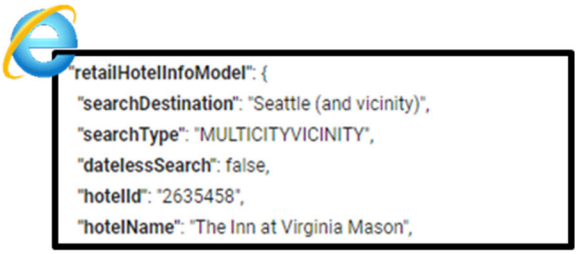
e. serve the set of formatted JavaScript objects as web content to a caller issuing the data conglomeration request (such as the HTML that displays the hotel search results page on Google Chrome);

f. receive and process a second data conglomeration request (such as a similar hotel search request on Internet Explorer) into a second data conglomeration service call (such as a service call for the hotels responsive to the search request)

g. obtain the unformatted data that was previously served (such as unformatted hotel results with data common across the first and second hotel search requests) in response to the second data conglomeration service call;

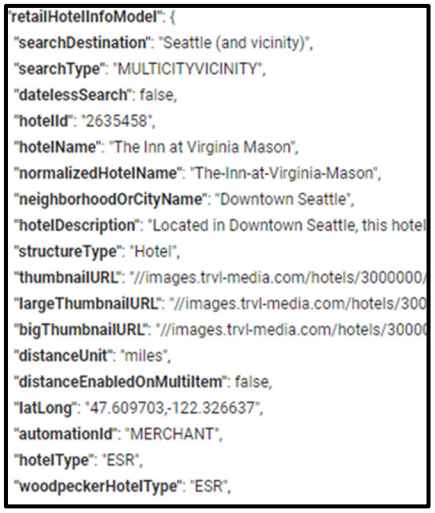


https://www.expedia.com/ Hotel-Search . . ., Google Chrome



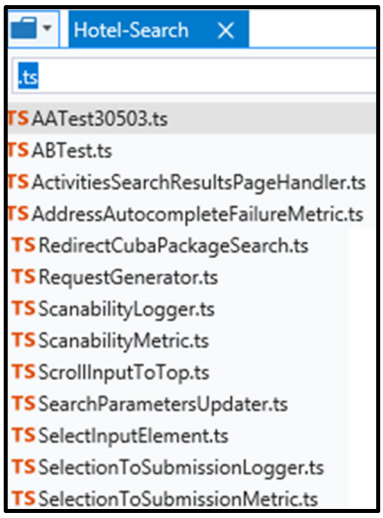
https://www.expedia.com/ Hotel-Search . . ., Internet Explorer

h. utilize a second set of JavaScript objects to represent the unformatted data as second JavaScript data (such as using another JSON to represent hotel search results);



https://www.expedia.com/Hotel-Search . . ., Internet Explorer

i. format the second set of JavaScript objects using a second set of JavaScript functions, the second set of JavaScript functions being different from the set of JavaScript functions (such as JavaScript functions used to format the JSON when the results are for an Internet Explorer browser); and



https://www.expedia.com/Hotel-Search . . ., Internet Explorer

j. serve the second set of formatted JavaScript objects as web content to a second caller issuing the second data conglomeration request (such as the HTML that displays the hotel search results page on Internet Explorer).

275. For example, Expedia infringes because www.travelocity.com and associated mobile applications infringe claim 13 of the ’348 patent by, for example:

a. providing a computer infrastructure being operable to: receive and process a data conglomeration request (such as a hotel search request on Google Chrome) into a data conglomeration service call (such as a service call for the hotels responsive to the search request);

b. obtain unformatted data (such as the unformatted hotel results) in response to the data conglomeration service call;

c. utilize a set of JavaScript objects (such as a JSON) to represent the data as JavaScript data (such as using a JSON to represent the hotel search results);

d. format the set of JavaScript objects (such as the JSON representing the hotel search results) using a set of JavaScript functions (such as the JavaScript functions like those in the webpack);

e. serve the set of formatted JavaScript objects as web content to a caller issuing the data conglomeration request (such as the HTML that displays the hotel search

results page on Google Chrome);

f. receive and process a second data conglomeration request (such as a similar hotel search request on Internet Explorer) into a second data conglomeration service call (such as a service call for the hotels responsive to the search request);

g. obtain the unformatted data that was previously served (such as unformatted hotel results with data common across the first and second hotel search requests) in response to the second data conglomeration service call;

h. utilize a second set of JavaScript objects to represent the unformatted data as second JavaScript data (such as using another JSON to represent hotel search results);

i. format the second set of JavaScript objects using a second set of JavaScript functions, the second set of JavaScript functions being different from the set of JavaScript functions (such as JavaScript functions used to format the JSON when the results are for an Internet Explorer browser); and

j. serve the second set of formatted JavaScript objects as web content to a second caller issuing the second data conglomeration request (such as the HTML that displays the hotel search results page on Internet Explorer).

276. For example, Hotels.com infringes because www.hotels.com and associated mobile applications infringe claim 13 of the ’348 patent by, for example:

a. providing a computer infrastructure being operable to: receive and process a data conglomeration request (such as a hotel search request on Google Chrome) into a data conglomeration service call (such as a service call for the hotels responsive to the search request);

b. obtain unformatted data (such as the unformatted hotel results) in response to the data conglomeration service call;

c. utilize a set of JavaScript objects (such as a JSON) to represent the data as JavaScript data (such as using a JSON to represent the hotel search results);

d. format the set of JavaScript objects (such as the JSON representing

the hotel search results) using a set of JavaScript functions (such as the JavaScript files used to format the JSON for the hotel search results page)

e. serve the set of formatted JavaScript objects as web content to a caller issuing the data conglomeration request (such as the HTML that displays the hotel search results page on Google Chrome);

f. receive and process a second data conglomeration request (such as a similar hotel search request on Internet Explorer) into a second data conglomeration service call (such as a service call for the hotels responsive to the search request);

g. obtain the unformatted data that was previously served (such as unformatted hotel results with data common across the first and second hotel search requests) in response to the second data conglomeration service call;

h. utilize a second set of JavaScript objects to represent the unformatted data as second JavaScript data (such as using another JSON to represent hotel search results);

i. format the second set of JavaScript objects using a second set of JavaScript functions, the second set of JavaScript functions being different from the set of JavaScript functions (such as JavaScript functions used to format the JSON when the results are for an Internet Explorer browser); and

j. serve the second set of formatted JavaScript objects as web content to a second caller issuing the second data conglomeration request (such as the HTML that displays the hotel search results page on Internet Explorer).

277. For example, Orbitz infringes because www.orbitz.com and associated mobile applications infringe claim 13 of the ’348 patent by, for example:

a. providing a computer infrastructure being operable to: receive and process a data conglomeration request (such as a hotel search request on Google Chrome) into a data conglomeration service call (such as a service call for the hotels responsive to the search request);

b. obtain unformatted data (such as the unformatted hotel results) in

response to the data conglomeration service call;

c. utilize a set of JavaScript objects (such as a JSON) to represent the data as JavaScript data (such as using a JSON to represent the hotel search results);

d. format the set of JavaScript objects (such as the JSON representing the hotel search results) using a set of JavaScript functions (such as the JavaScript functions like those in the webpack);

e. serve the set of formatted JavaScript objects as web content to a caller issuing the data conglomeration request (such as the HTML that displays the hotel search results page on Google Chrome);

f. receive and process a second data conglomeration request (such as a similar hotel search request on Internet Explorer) into a second data conglomeration service call (such as a service call for the hotels responsive to the search request);

g. obtain the unformatted data that was previously served (such as unformatted hotel results with data common across the first and second hotel search requests) in response to the second data conglomeration service call;

h. utilize a second set of JavaScript objects to represent the unformatted data as second JavaScript data (such as using another JSON to represent hotel search results);

i. format the second set of JavaScript objects using a second set of JavaScript functions, the second set of JavaScript functions being different from the set of JavaScript functions (such as JavaScript functions used to format the JSON when the results are for an Internet Explorer browser); and

j. serve the second set of formatted JavaScript objects as web content to a second caller issuing the second data conglomeration request (such as the HTML that displays the hotel search results page on Internet Explorer).

278. On information and belief, each of the Defendants performs one or more of the claimed method steps in Arizona.

279. On information and belief, end users and customers of www.expedia.com,

www.travelocity.com, www.hotels.com, and www.orbitz.com and the associated mobile applications directly infringe the '348 patent through the use of the websites and mobile applications to view and purchase travel listings. Expedia Group's Annual Report lists billions of dollars of revenue from its website and mobile applications. The revenue indicates that numerous end users and customers used www.expedia.com, www.travelocity.com, www.hotels.com, and www.orbitz.com and the associated mobile application in order to view real estate listings and thereby infringe the '348 patent.

280. On information and belief, despite their knowledge of the infringement of the '348 patent, Expedia and the Expedia Subsidiaries have intended and continue to intend to induce patent infringement by third parties. For example, Expedia and the Expedia Subsidiaries have and continue to encourage and instruct customers and end users to use www.expedia.com, www.hotels.com, and www.orbitz.com and the associated mobile applications in a manner that infringes the '348 patent by advertising the websites and mobile applications, providing customer support, and designing their website and mobile applications in such a way that the use of the website and mobile applications by an end user or customer infringes the '348 patent. For example, https://www.expedia.com/service/, https://service.hotels.com/en-us/?intlid=HOME+%3A%3A+header_help_section, and https://www.orbitz.com/service/ provide direction and support for Expedia's and the Expedia Subsidiaries' websites and associated mobile applications. On information and belief, to the extent Expedia and the Expedia Subsidiaries were not aware that they were encouraging their customers and end users to infringe the '348 patent, their lack of knowledge was based on being willfully blind to the possibility that their acts would cause infringement.

281. On information and belief, despite knowledge of the infringement of the '348 patent, Expedia and the Expedia Subsidiaries intended and continue to intend to contribute to patent infringement by third parties. For example, Expedia and the Expedia Subsidiaries provide search prompts that encourage a customer or end user to request a set of JavaScript objects, such as the JSON representing hotel search results, in a manner

that infringes the '348 patent and does not have substantial non-infringing uses..

282. IBM has been damaged by the infringement of its '348 patent by Defendants and will continue to be damaged by such infringement. IBM is entitled to recover from Defendants the damages sustained by IBM as a result of Defendants' wrongful acts.

283. IBM has suffered and continues to suffer irreparable harm, for which there is no adequate remedy at law, and will continue to do so unless Defendants are enjoined therefrom by this Court.

284. Defendants have had knowledge of the '348 patent and their alleged infringement since at least September 12, 2019.

285. The infringement by Defendants of the '348 patent was deliberate and willful, entitling IBM to increased damages under 35 U.S.C. § 284 and to attorney fees and costs incurred in prosecuting this action under 35 U.S.C. § 285. In committing these acts of infringement, Defendants actually knew or should have known that their actions constituted an unjustifiably high risk of infringement of a valid and enforceable patent.

COUNT FIVE

INFRINGEMENT OF THE '265 PATENT

286. IBM incorporates by reference paragraphs 1-285.

287. IBM is the owner of all right, title and interest in the '265 patent. The '265 patent was duly and properly issued by the USPTO on September 9, 2014. The '265 patent was duly assigned to IBM. A copy of the '265 patent is attached hereto as **Exhibit E**.

288. In violation of 35 U.S.C. § 271, Expedia and the subsidiaries it controls have infringed, contributed to the infringement of, and/or induced others to infringe one or more of the claims of the '265 patent by having made, designed, offered for sale, sold, provided, used, maintained, and/or supported their websites, including www.expedia.com, www.travelocity.com, www.hotwire.com, www.hotels.com, and www.orbitz.com and the associated mobile applications, including the Expedia, Travelocity, Hotwire, Hotels.com, and Orbitz applications for mobile devices running on, for example, the Apple iOS and

Google Android operating systems. Expedia and Defendants' infringement is continuing.

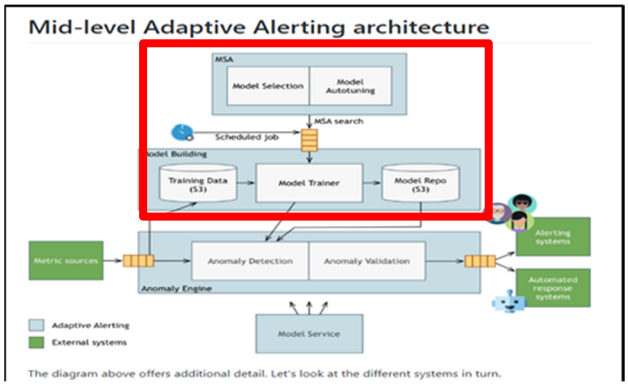
289. As outlined below, on information and belief, Expedia, Hotels.com, Hotwire, and Orbitz infringe the '265 patent.

290. Furthermore, Expedia directs and controls the other Defendants' infringement of the '265 patent. Expedia "operate[s] several technology platforms that support [Expedia's] brands. Expedia's technology platform supports [Expedia's] full-service and multi-product brands, including Brand Expedia, Orbitz . . . as well as certain parts of the Hotwire brand. The Hotels.com technology platform supports [Expedia's] hotel-only offering, including Hotels.com . . . ." Through Expedia's control of the technological platforms used in the other Defendants' websites and mobile applications, Expedia directs, controls, and causes the infringement of the '265 patent for each of the identified websites and associated mobile applications below.

291. For example, Expedia infringes because www.expedia.com and associated mobile applications infringe claim 11 of the '265 patent by, for example:

a. identifying , by a processing device, events for web sessions (such as identifying users purchasing flights at www.expedia.com), wherein the events comprise network data including webpages, requests, and/or responses sent over a network between a web server and user devices during the web sessions (such as network data being exchanged during users' web sessions to purchase flights at www.expedia.com); and user inputs entered at user devices for interacting with the webpages (such as mouse clicks or the entry of users' credit card information);

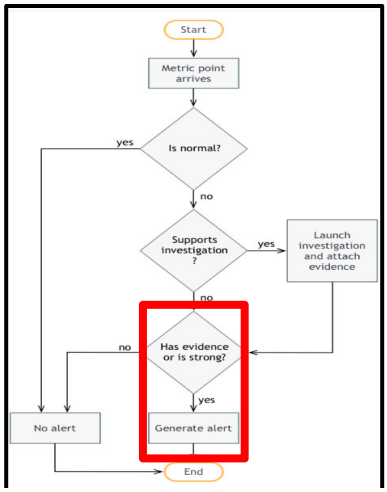
b. generating, by the processing device, a model from the events (such as generating a model designed to detect anomalies in Expedia's web services during users' web sessions to purchase flights at www.expedia.com);



https://github.com/ExpediaDotCom/adaptive-alerting/wiki/Architectural-Overview#anomaly-detection

c. identifying, by the processing device, outliers against the model (such as detecting an abnormal number of failed flight bookings during users' web sessions);

d. generating, by the processing device, reports identifying the events based on a significance of the events to the outliers (such as by identifying events as normal, weak anomaly or strong anomaly and producing reports for the strong anomalies);



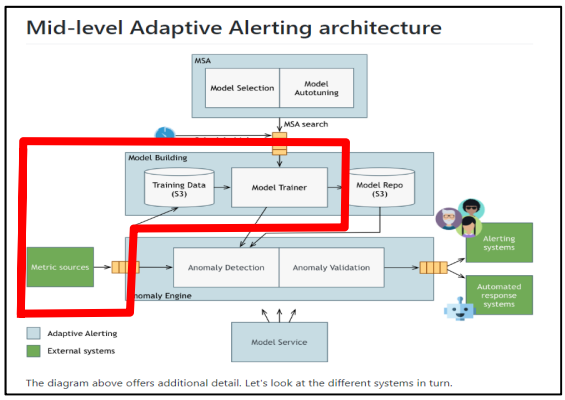
https://github.com/ExpediaDotCom/adaptive-alerting/wiki/Anomaly-Validation

e. identifying, by the processing device, Document Object Model (DOM) changes for the webpages displayed during the web sessions (such as by registering and tracking mouse clicks, mouse movements, and text entries);

f. identifying, by the processing device, a number of occurrences of the

DOM changes (such as the numbers of mouse clicks, mouse movements, and text entries users make during web sessions); and

g. using, by the processing device, the number of occurrences of the DOM changes to generate the model (such as by using the numbers of mouse clicks, mouse movements, and text entries users make during web sessions to train the model).



https://github.com/ExpediaDotCom/adaptive-alerting/wiki/Architectural-Overview#anomaly-detection

292. For example, Expedia infringes because www.travelocity.com and associated mobile applications infringe claim 11 of the '265 patent by, for example:

a. identifying , by a processing device, events for web sessions (such as a identifying users purchasing flights at www.travelocity.com), wherein the events comprise network data including webpages, requests, and/or responses sent over a network between a web server and user devices during the web sessions (such as network data being exchanged during users' web sessions to purchase flights at www.travelocity.com); and user inputs entered at user devices for interacting with the webpages (such as mouse clicks or the entry of users' credit card information);

b. generating, by the processing device, a model from the events (such as generating a model designed to detect anomalies in Expedia's web services during users' web sessions to purchase flights at www.travelocity.com);

c. identifying, by the processing device, outliers against the model (such as detecting an abnormal number of failed flight bookings during users' web sessions);

d. generating, by the processing device, reports identifying the events based on a significance of the events to the outliers (such as by identifying events as normal, weak anomaly or strong anomaly and producing reports for the strong anomalies);

e. identifying, by the processing device, Document Object Model (DOM) changes for the webpages displayed during the web sessions (such as by registering and tracking mouse clicks, mouse movements, and text entries);

f. identifying, by the processing device, a number of occurrences of the DOM changes (such as the numbers of mouse clicks, mouse movements, and text entries users make during web sessions); and

g. using, by the processing device, the number of occurrences of the DOM changes to generate the model (such as by using the numbers of mouse clicks, mouse movements, and text entries users make during web sessions to train the model).

293. For example, Hotels.com infringes because www.hotels.com and associated mobile applications infringe claim 11 of the ’265 patent by, for example:

a. identifying , by a processing device, events for web sessions (such as a identifying users purchasing flights at www.hotels.com), wherein the events comprise network data including webpages, requests, and/or responses sent over a network between a web server and user devices during the web sessions (such as network data being exchanged during users’ web sessions to purchase flights at www.hotels.com); and user inputs entered at user devices for interacting with the webpages (such as mouse clicks or the entry of users’ credit card information);

b. generating, by the processing device, a model from the events (such as generating a model designed to detect anomalies in Hotels.com’s web services during users’ web sessions to purchase flights at www.hotels.com);

c. identifying, by the processing device, outliers against the model (such as detecting an abnormal number of failed flight bookings during users’ web sessions);

d. generating, by the processing device, reports identifying the events

based on a significance of the events to the outliers (such as by identifying events as normal, weak anomaly or strong anomaly and producing reports for the strong anomalies);

e. identifying, by the processing device, Document Object Model (DOM) changes for the webpages displayed during the web sessions (such as by registering and tracking mouse clicks, mouse movements, and text entries);

f. identifying, by the processing device, a number of occurrences of the DOM changes (such as the numbers of mouse clicks, mouse movements, and text entries users make during web sessions); and

g. using, by the processing device, the number of occurrences of the DOM changes to generate the model (such as by using the numbers of mouse clicks, mouse movements, and text entries users make during web sessions to train the model).

294. For example, Hotwire infringes because www.hotwire.com and associated mobile applications infringe claim 11 of the ’265 patent by, for example:

a. identifying , by a processing device, events for web sessions (such as a identifying users purchasing flights at www.hotwire.com), wherein the events comprise network data including webpages, requests, and/or responses sent over a network between a web server and user devices during the web sessions (such as network data being exchanged during users’ web sessions to purchase flights at www.hotwire.com); and user inputs entered at user devices for interacting with the webpages (such as mouse clicks or the entry of users’ credit card information);

b. generating, by the processing device, a model from the events (such as generating a model designed to detect anomalies in Hotwire’s web services during users’ web sessions to purchase flights at www.hotwire.com);

c. identifying, by the processing device, outliers against the model (such as detecting an abnormal number of failed flight bookings during users’ web sessions);

d. generating, by the processing device, reports identifying the events based on a significance of the events to the outliers (such as by identifying events as

normal, weak anomaly or strong anomaly and producing reports for the strong anomalies);

e. identifying, by the processing device, Document Object Model (DOM) changes for the webpages displayed during the web sessions (such as by registering and tracking mouse clicks, mouse movements, and text entries);

f. identifying, by the processing device, a number of occurrences of the DOM changes (such as the numbers of mouse clicks, mouse movements, and text entries users make during web sessions); and

g. using, by the processing device, the number of occurrences of the DOM changes to generate the model (such as by using the numbers of mouse clicks, mouse movements, and text entries users make during web sessions to train the model).

295. For example, Orbitz infringes because www.orbitz.com and associated mobile applications infringe claim 11 of the ’265 patent by, for example:

a. identifying , by a processing device, events for web sessions (such as a identifying users purchasing flights at www.orbitz.com), wherein the events comprise network data including webpages, requests, and/or responses sent over a network between a web server and user devices during the web sessions (such as network data being exchanged during users’ web sessions to purchase flights at www.orbitz.com); and user inputs entered at user devices for interacting with the webpages (such as mouse clicks or the entry of users’ credit card information);

b. generating, by the processing device, a model from the events (such as generating a model designed to detect anomalies in Orbitz’s web services during users’ web sessions to purchase flights at www.orbitz.com);

c. identifying, by the processing device, outliers against the model (such as detecting an abnormal number of failed flight bookings during users’ web sessions);

d. generating, by the processing device, reports identifying the events based on a significance of the events to the outliers (such as by identifying events as normal, weak anomaly or strong anomaly and producing reports for the strong anomalies);

e. identifying, by the processing device, Document Object Model (DOM) changes for the webpages displayed during the web sessions (such as by registering and tracking mouse clicks, mouse movements, and text entries);

f. identifying, by the processing device, a number of occurrences of the DOM changes (such as the numbers of mouse clicks, mouse movements, and text entries users make during web sessions); and

g. using, by the processing device, the number of occurrences of the DOM changes to generate the model (such as by using the numbers of mouse clicks, mouse movements, and text entries users make during web sessions to train the model).

296. On information and belief, end users and customers of www.expedia.com, www.travelocity.com, www.hotels.com, www.hotwire.com, and www.orbitz.com and the associated mobile applications directly infringe the '265 patent through the use of the websites and mobile applications to view and purchase travel listings. Expedia Group's Annual Report lists billions of dollars of revenue from its website and mobile applications. The revenue indicates that numerous end users and customers used www.expedia.com, www.travelocity.com, www.hotels.com, www.hotwire.com, and www.orbitz.com and the associated mobile application in order to view real estate listings and thereby infringe the '265 patent.

297. On information and belief, despite their knowledge of the infringement of the '265 patent, Expedia and the Expedia Subsidiaries have intended and continue to intend to induce patent infringement by third parties. For example, Expedia and the Expedia Subsidiaries have and continue to encourage and instruct customers and end users to use www.expedia.com, www.hotels.com, www.hotwire.com, and www.orbitz.com and the associated mobile applications in a manner that infringes the '265 patent by advertising the websites and mobile applications, providing customer support, and designing their website and mobile applications in such a way that the use of the website and mobile applications by an end user or customer infringes the '265 patent. For example, https://www.expedia.com/service/, https://service.hotels.com/en-

us/?intlid=HOME+%3A%3A+header_help_section, https://www.orbitz.com/service/, http://helpcenter.hotwire.com/, and provide direction and support for Expedia's and the Expedia Subsidiaries' websites and associated mobile applications. On information and belief, to the extent Expedia and the Expedia Subsidiaries were not aware that they were encouraging their customers and end users to infringe the '265 patent, their lack of knowledge was based on being willfully blind to the possibility that their acts would cause infringement.

298. On information and belief, each of the Defendants performs one or more of the claimed method steps in Arizona.

299. On information and belief, despite knowledge of the infringement of the '265 patent, Expedia and the Expedia Subsidiaries intended and continue to intend to contribute to patent infringement by third parties.

300. IBM has been damaged by the infringement of its '265 patent by Defendants. IBM is entitled to recover from Defendants the damages sustained by IBM as a result of Defendants' wrongful acts.

301. IBM has suffered and continues to suffer irreparable harm, for which there is no adequate remedy at law, and will continue to do so unless Defendants are enjoined therefrom by this Court.

302. Defendants have had knowledge of the '265 patent and their alleged infringement since at least September 12, 2019. However, the Defendants have not stopped infringing.

303. The infringement by Defendants of the '265 patent was deliberate and willful, entitling IBM to increased damages under 35 U.S.C. § 284 and to attorney fees and costs incurred in prosecuting this action under 35 U.S.C. § 285. In committing these acts of infringement, Defendants actually knew or should have known that their actions constituted an unjustifiably high risk of infringement of a valid and enforceable patent.

COUNT SIX

INFRINGEMENT OF THE '855 PATENT

304. IBM incorporates by reference paragraphs 1-303.

305. IBM is the owner of all right, title and interest in the '855 patent. The '855 patent was duly and properly issued by the USPTO on March 29, 2016. The '855 patent was duly assigned to IBM. A copy of the '855 patent is attached hereto as **Exhibit F**.

306. In violation of 35 U.S.C. § 271, Expedia and the subsidiaries it controls have infringed, contributed to the infringement of, and/or induced others to infringe one or more of the claims of the '855 patent by having made, designed, offered for sale, sold, provided, used, maintained, and/or supported their websites, including www.expedia.com, www.travelocity.com, and www.orbitz.com and the associated mobile applications, including the Expedia, Travelocity, and Orbitz applications for mobile devices running on, for example, the Apple iOS and Google Android operating systems. Expedia and Defendants' infringement is continuing.

307. As outlined below, on information and belief, Expedia and Orbitz infringe the '855 patent.

308. Furthermore, Expedia directs and controls the other Defendants' infringement of the '855 patent. Expedia "operate[s] several technology platforms that support [Expedia's] brands. Expedia's technology platform supports [Expedia's] full-service and multi-product brands, including Brand Expedia, Orbitz . . . as well as certain parts of the Hotwire brand. The Hotels.com technology platform supports [Expedia's] hotel-only offering, including Hotels.com . . . ." Through Expedia's control of the technological platforms used in the other Defendants' websites and mobile applications, Expedia directs, controls, and causes the infringement of the '855 patent for each of the identified websites and associated mobile applications below.

309. For example, Expedia infringes because www.expedia.com and associated mobile applications infringe claim 1 of the '855 patent by, for example:

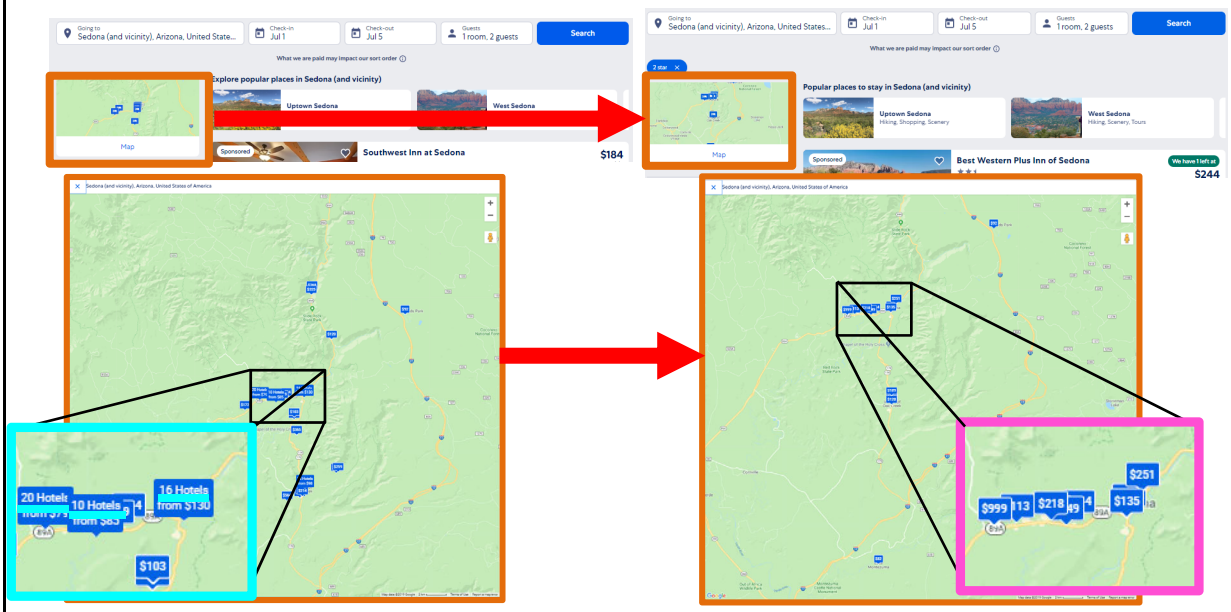
a. updating an existing visual display (such as a map view of an Expedia

hotel search result) responsive to a subsequent user query (such as a refinement of the previous search by, e.g., filtering), comprising the steps of:

b. obtaining new information (such as hotel information) requested by the subsequent user query; and

c. dynamically deriving one or more visual transformations for updating at least a portion of the existing display to incorporate the new information (such as by updating the map view with new hotel information), wherein the transformation derivation is modeled as an optimization operation which attempts to balance visual context management constraints (such as transforming the map to maintain continuity between the consecutive map views) and to achieve a desired presentation of intended information, and the optimization operation comprises computing an overall display overlap metric (such as by determining how hotels are displayed as, e.g., individual markers or clusters) based on a visual overlap metric (such as any zoom change of the map view) and a semantic overlap metric (such as whether the search results meet the same search criteria on the same map view) and regulating the overall display overlap metric to allow more overlap for a data browsing display application (such as when no filter is applied) and less overlap for a data filtering display application (such as when a filter is applied);

d. wherein the existing display comprises search results associated with a prior user query (such as hotel search results from the first search), the new information comprises search results associated with the subsequent user query (such as additional hotel search results from the subsequent search or filter), and the intended information comprises at least a portion of the search results associated with the prior user query and at least a portion of the search results associated with the subsequent user query.



(https://www.expedia.com/Hotel-Search?...)
(https://www.expedia.com/Hotel-Search?...&pwaOverlay=map...)

310. For example, Expedia infringes because www.travelocity.com and associated mobile applications infringe claim 1 of the '855 patent by, for example:

a. updating an existing visual display (such as a map view of a Travelocity hotel search result) responsive to a subsequent user query (such as a refinement of the previous search by, e.g., filtering), comprising the steps of:

b. obtaining new information (such as hotel information) requested by the subsequent user query; and

c. dynamically deriving one or more visual transformations for updating at least a portion of the existing display to incorporate the new information (such as by updating the map view with new hotel information), wherein the transformation derivation is modeled as an optimization operation which attempts to balance visual context management constraints (such as transforming the map to maintain continuity between the consecutive map views) and to achieve a desired presentation of intended information, and the optimization operation comprises computing an overall display overlap metric (such as by determining how hotels are displayed as, e.g., individual markers or clusters) based on a visual overlap metric (such as any zoom change of the

map view) and a semantic overlap metric (such as whether the search results meet the same search criteria on the same map view) and regulating the overall display overlap metric to allow more overlap for a data browsing display application (such as when no filter is applied) and less overlap for a data filtering display application (such as when a filter is applied);

d. wherein the existing display comprises search results associated with a prior user query (such as hotel search results from the first search), the new information comprises search results associated with the subsequent user query (such as additional hotel search results from the subsequent search or filter), and the intended information comprises at least a portion of the search results associated with the prior user query and at least a portion of the search results associated with the subsequent user query.

311. For example, Orbitz infringes because www.orbitz.com and associated mobile applications infringe claim 1 of the ’855 patent by, for example:

a. updating an existing visual display (such as a map view of an Orbitz hotel search result) responsive to a subsequent user query (such as a refinement of the previous search by, e.g., filtering), comprising the steps of:

b. obtaining new information (such as hotel information) requested by the subsequent user query; and

c. dynamically deriving one or more visual transformations for updating at least a portion of the existing display to incorporate the new information (such as by updating the map view with new hotel information), wherein the transformation derivation is modeled as an optimization operation which attempts to balance visual context management constraints (such as transforming the map to maintain continuity between the consecutive map views) and to achieve a desired presentation of intended information, and the optimization operation comprises computing an overall display overlap metric (such as by determining how hotels are displayed as, e.g., individual markers or clusters) based on a visual overlap metric (such as any zoom change of the map view) and a semantic overlap metric (such as whether the search results meet the

same search criteria on the same map view) and regulating the overall display overlap metric to allow more overlap for a data browsing display application (such as when no filter is applied) and less overlap for a data filtering display application (such as when a filter is applied);

d. wherein the existing display comprises search results associated with a prior user query (such as hotel search results from the first search), the new information comprises search results associated with the subsequent user query (such as additional hotel search results from the subsequent search or filter), and the intended information comprises at least a portion of the search results associated with the prior user query and at least a portion of the search results associated with the subsequent user query.

312. On information and belief, end users and customers of www.expedia.com, www.travelocity.com, and www.orbitz.com and the associated mobile applications directly infringe the '855 patent through the use of the websites and mobile applications to view and purchase travel listings. Expedia Group's Annual Report lists billions of dollars of revenue from its website and mobile applications. The revenue indicates that numerous end users and customers used www.expedia.com, www.travelocity.com, and www.orbitz.com and the associated mobile application in order to view real estate listings and thereby infringe the '855 patent.

313. On information and belief, despite their knowledge of the infringement of the '855 patent, Expedia and the Expedia Subsidiaries have intended and continue to intend to induce patent infringement by third parties. For example, Expedia and the Expedia Subsidiaries have and continue to encourage and instruct customers and end users to use www.expedia.com, and www.orbitz.com and the associated mobile applications in a manner that infringes the '855 patent by advertising the websites and mobile applications, providing customer support, and designing their website and mobile applications in such a way that the use of the website and mobile applications by an end user or customer infringes the '855 patent. For example, https://www.expedia.com/service/, and https://www.orbitz.com/service/ provide direction

and support for Expedia's and the Expedia Subsidiaries' websites and associated mobile applications. On information and belief, to the extent Expedia and the Expedia Subsidiaries were not aware that they were encouraging their customers and end users to infringe the '855 patent, their lack of knowledge was based on being willfully blind to the possibility that their acts would cause infringement.

314. On information and belief, each of the Defendants performs one or more of the claimed method steps in Arizona.

315. On information and belief, despite knowledge of the infringement of the '855 patent, Expedia and the Expedia Subsidiaries intended and continue to intend to contribute to patent infringement by third parties. For example, by providing the necessary HTML and other code necessary to create the map displays on users' screens.

316. IBM has been damaged by the infringement of its '855 patent by Defendants. IBM is entitled to recover from Defendants the damages sustained by IBM as a result of Defendants' wrongful acts.

317. IBM has suffered and continues to suffer irreparable harm, for which there is no adequate remedy at law, and will continue to do so unless Defendants are enjoined therefrom by this Court.

318. Defendants have had knowledge of the '855 patent and their alleged infringement since at least September 12, 2019. However, the Defendants have not stopped infringing.

319. The infringement by Defendants of the '855 patent was deliberate and willful, entitling IBM to increased damages under 35 U.S.C. § 284 and to attorney fees and costs incurred in prosecuting this action under 35 U.S.C. § 285. In committing these acts of infringement, Defendants actually knew or should have known that their actions constituted an unjustifiably high risk of infringement of a valid and enforceable patent.

COUNT SEVEN

INFRINGEMENT OF THE '414 PATENT

320. IBM incorporates by reference paragraphs 1-319.

321. IBM is the owner of all right, title and interest in the '414 patent. The '414 patent was duly and properly issued by the USPTO on February 14, 2017. The '414 patent was duly assigned to IBM. A copy of the '414 patent is attached hereto as **Exhibit G**.

322. In violation of 35 U.S.C. § 271, Expedia and the subsidiaries it controls have infringed, contributed to the infringement of, and/or induced others to infringe one or more of the claims of the '414 patent by having made, designed, offered for sale, sold, provided, used, maintained, and/or supported their websites, including www.expedia.com, www.travelocity.com, www.hotwire.com, www.hotels.com, and www.orbitz.com and the associated mobile applications, including the Expedia, Travelocity, Hotwire, Hotels.com, and Orbitz applications for mobile devices running on, for example, the Apple iOS and Google Android operating systems. Expedia and Defendants' infringement is continuing.

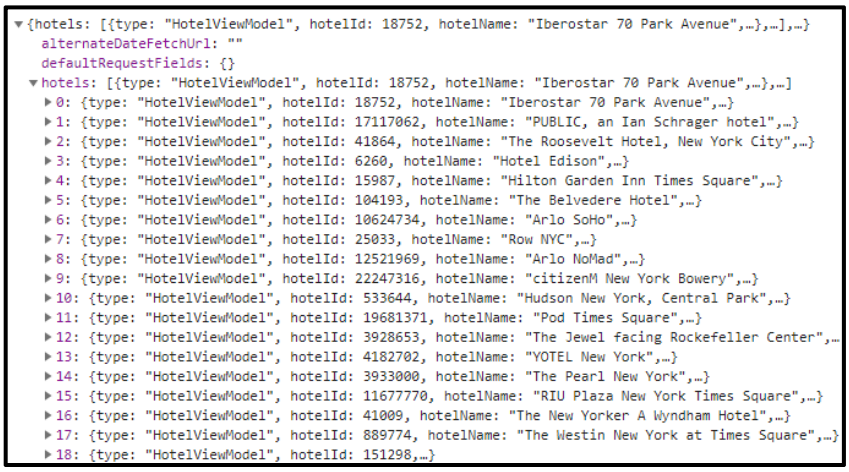
323. As outlined below, Expedia, Hotels.com, Hotwire, and Orbitz infringe the '414 patent.

324. Furthermore, Expedia directs and controls the other Defendants' infringement of the '414 patent. Expedia "operate[s] several technology platforms that support [Expedia's] brands. Expedia's technology platform supports [Expedia's] full-service and multi-product brands, including Brand Expedia, Orbitz . . . as well as certain parts of the Hotwire brand. The Hotels.com technology platform supports [Expedia's] hotel-only offering, including Hotels.com . . . ." Through Expedia's control of the technological platforms used in the other Defendants' websites and mobile applications, Expedia directs, controls, and causes the infringement of the '414 patent for each of the identified websites and associated mobile applications below.

325. For example, Expedia infringes because www.expedia.com and associated mobile applications infringe claim 1 of the '414 patent by, for example:

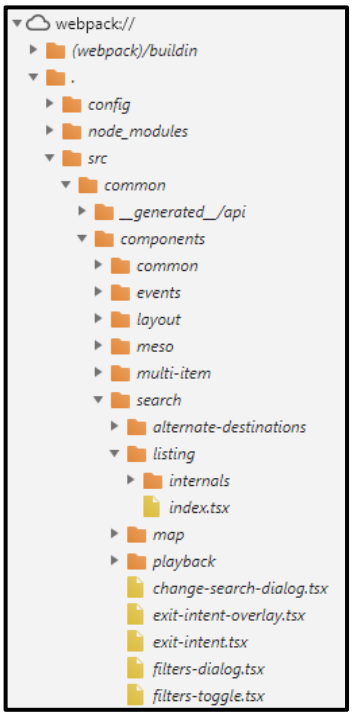
a. requesting a set of JavaScript objects (such as the JSON representing hotel search results) and a set of JavaScript functions (such as the JavaScript functions like those in the webpack) in a single Hypertext Transfer Protocol (HTTP) request (such as a HTTP request requesting hotel search results);

b. in response to the requesting: obtaining the set of JavaScript objects (such as obtaining the JSON representing hotel search results) that represents dynamic JavaScript data (such as the price and the number of reviews for each hotel responsive to the hotel search);



https://www.expedia.com/Hotel-Search . . .

c. obtaining the set of JavaScript functions (such as obtaining the JavaScript functions like those in the webpack) to format the set of JavaScript objects, the set of JavaScript objects being distinct from the set of JavaScript functions (the JavaScript objects represented by the JSON is distinct from the JavaScript functions like those in the webpack); and

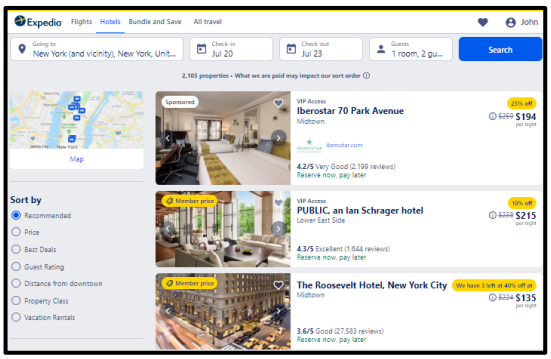


https://www.expedia.com/Hotel-Search . . .

d. formatting the set of JavaScript objects using the set of JavaScript functions as a parameter (such as formatting the JSON using the JavaScript functions like those in the webpack); and

https://www.expedia.com/Hotel-Search . . .

e. outputting at least a subset of the set of JavaScript objects in a format determined by the set of JavaScript functions (such as the HTML that displays the hotel search results page).



https://www.expedia.com/Hotel-Search . . .

326. For example, Expedia infringes because www.travelocity.com and associated mobile applications infringe claim 1 of the ’414 patent by, for example:

a. requesting a set of JavaScript objects (such as the JSON representing hotel search results) and a set of JavaScript functions (such as the JavaScript functions like those in the webpack) in a single Hypertext Transfer Protocol (HTTP) request (such as a HTTP request requesting hotel search results);

b. in response to the requesting: obtaining the set of JavaScript objects (such as obtaining the JSON representing hotel search results) that represents dynamic JavaScript data (such as the price and the number of reviews for each hotel responsive to the hotel search);

c. obtaining the set of JavaScript functions (such as obtaining the JavaScript functions like those in the webpack) to format the set of JavaScript objects, the set of JavaScript objects being distinct from the set of JavaScript functions (the JavaScript objects represented by the JSON is distinct from the JavaScript functions like those in the webpack); and

d. formatting the set of JavaScript objects using the set of JavaScript functions as a parameter (such as formatting the JSON using the JavaScript functions like

those in the webpack); and

e. outputting at least a subset of the set of JavaScript objects in a format determined by the set of JavaScript functions (such as the HTML that displays the hotel search results page).

327. For example, Hotels.com infringes because www.hotels.com and associated mobile applications infringe claim 1 of the '414 patent by, for example:

a. requesting a set of JavaScript objects (such as the JSON representing hotel search results) and a set of JavaScript functions (such as the JavaScript files used to format the JSON for the hotel search results page) in a single Hypertext Transfer Protocol (HTTP) request (such as a HTTP request requesting hotel search results);

b. in response to the requesting: obtaining the set of JavaScript objects (such as obtaining the JSON representing hotel search results) that represents dynamic JavaScript data (such as the price and the number of reviews for each hotel responsive to the hotel search);

c. obtaining the set of JavaScript functions (such as obtaining the JavaScript files used to format the JSON for the hotel search results page) to format the set of JavaScript objects, the set of JavaScript objects being distinct from the set of JavaScript functions (the JavaScript objects represented by the JSON is distinct from the JavaScript files used to format the JSON for the hotel search results page); and

d. formatting the set of JavaScript objects using the set of JavaScript functions as a parameter (such as formatting the JSON using the JavaScript files); and

e. outputting at least a subset of the set of JavaScript objects in a format determined by the set of JavaScript functions (such as the HTML that displays the hotel search results page).

328. For example, Hotwire infringes because www.hotwire.com and associated mobile applications infringe claim 1 of the '414 patent by, for example:

a. requesting a set of JavaScript objects (such as the JSON representing hotel search results) and a set of JavaScript functions (such as the JavaScript files used to

format the JSON for the hotel search results page) in a single Hypertext Transfer Protocol (HTTP) request (such as a HTTP request requesting hotel search results);

b. in response to the requesting: obtaining the set of JavaScript objects (such as obtaining the JSON representing hotel search results) that represents dynamic JavaScript data (such as the price and the number of reviews for each hotel responsive to the hotel search);

c. obtaining the set of JavaScript functions (such as obtaining the JavaScript files used to format the JSON for the hotel search results page) to format the set of JavaScript objects, the set of JavaScript objects being distinct from the set of JavaScript functions (the JavaScript objects represented by the JSON is distinct from the JavaScript files used to format the JSON for the hotel search results page); and

d. formatting the set of JavaScript objects using the set of JavaScript functions as a parameter (such as formatting the JSON using the JavaScript files); and

e. outputting at least a subset of the set of JavaScript objects in a format determined by the set of JavaScript functions (such as the HTML that displays the hotel search results page).

329. For example, Orbitz infringes because www.orbitz.com and associated mobile applications infringe claim 1 of the ’414 patent by, for example:

a. requesting a set of JavaScript objects (such as the JSON representing hotel search results) and a set of JavaScript functions (such as the JavaScript functions like those in the webpack) in a single Hypertext Transfer Protocol (HTTP) request (such as a HTTP request requesting hotel search results);

b. in response to the requesting: obtaining the set of JavaScript objects (such as obtaining the JSON representing hotel search results) that represents dynamic JavaScript data (such as the price and the number of reviews for each hotel responsive to the hotel search);

c. obtaining the set of JavaScript functions (such as obtaining the JavaScript functions like those in the webpack) to format the set of JavaScript objects, the

set of JavaScript objects being distinct from the set of JavaScript functions (the JavaScript objects represented by the JSON is distinct from the JavaScript functions like those in the webpack); and

d. formatting the set of JavaScript objects using the set of JavaScript functions as a parameter (such as formatting the JSON using the JavaScript functions like those in the webpack); and

e. outputting at least a subset of the set of JavaScript objects in a format determined by the set of JavaScript functions (such as the HTML that displays the hotel search results page).

330. On information and belief, end users and customers of www.expedia.com, www.travelocity.com, www.hotels.com, www.hotwire.com, and www.orbitz.com and the associated mobile applications directly infringe the '414 patent through the use of the websites and mobile applications to view and purchase travel listings. Expedia Group's Annual Report lists billions of dollars of revenue from its website and mobile applications. The revenue indicates that numerous end users and customers used www.expedia.com, www.hotels.com, www.hotwire.com, and www.orbitz.com and the associated mobile application in order to view real estate listings and thereby infringe the '414 patent.

331. On information and belief, despite their knowledge of the infringement of the '414 patent, Expedia and the Expedia Subsidiaries have intended and continue to intend to induce patent infringement by third parties. For example, Expedia and the Expedia Subsidiaries have and continue to encourage and instruct customers and end users to use www.expedia.com, www.hotels.com, www.hotwire.com, and www.orbitz.com and the associated mobile applications in a manner that infringes the '414 patent by advertising the websites and mobile applications, providing customer support, and designing their website and mobile applications in such a way that the use of the website and mobile applications by an end user or customer infringes the '414 patent. For example, https://www.expedia.com/service/, https://service.hotels.com/en-us/?intlid=HOME+%3A%3A+header_help_section, https://www.orbitz.com/service/,

http://helpcenter.hotwire.com/, and provide direction and support for Expedia's and the Expedia Subsidiaries' websites and associated mobile applications. On information and belief, to the extent Expedia and the Expedia Subsidiaries were not aware that they were encouraging their customers and end users to infringe the '414 patent, their lack of knowledge was based on being willfully blind to the possibility that their acts would cause infringement.

332. On information and belief, each of the Defendants performs one or more of the claimed method steps in Arizona.

333. On information and belief, despite knowledge of the infringement of the '414 patent, Expedia and the Expedia Subsidiaries intended and continue to intend to contribute to patent infringement by third parties. For example, Expedia and the Expedia Subsidiaries provide search prompts that encourage a customer or end user to request a set of JavaScript objects, such as the JSON representing hotel search results, in a manner that infringes the '414 patent and does not have substantial non-infringing uses.

334. IBM has been damaged by the infringement of its '414 patent by Defendants. IBM is entitled to recover from Defendants the damages sustained by IBM as a result of Defendants' wrongful acts.

335. IBM has suffered and continues to suffer irreparable harm, for which there is no adequate remedy at law, and will continue to do so unless Defendants are enjoined therefrom by this Court.

336. Defendants have had knowledge of the '414 patent and their alleged infringement since at least September 12, 2019. However, the Defendants have not stopped infringing.

337. The infringement by Defendants of the '414 patent was deliberate and willful, entitling IBM to increased damages under 35 U.S.C. § 284 and to attorney fees and costs incurred in prosecuting this action under 35 U.S.C. § 414. In committing these acts of infringement, Defendants actually knew or should have known that their actions constituted an unjustifiably high risk of infringement of a valid and enforceable patent.

RELIEF REQUESTED

Wherefore, IBM respectfully requests that this Court enter judgment against the Defendants as follows:

A. That the '440 patent has been and continues to be infringed by Defendants;

B. That Defendants' infringement of the '440 patent has been willful;

C. An injunction against further infringement of the '440 patent;

D. That the '193 patent has been and continues to be infringed by Defendants;

E. That Defendants' infringement of the '193 patent has been willful;

F. An injunction against further infringement of the '193 patent;

G. That the '234 patent has been and continues to be infringed by Defendants;

H. That Defendants' infringement of the '234 patent has been willful;

I. An injunction against further infringement of the '234 patent;

J. That the '348 patent has been and continues to be infringed by Defendants;

K. That Defendants' infringement of the '348 patent has been willful;

L. An injunction against further infringement of the '348 patent;

M. That the '265 patent has been and continues to be infringed by Defendants;

N. That Defendants' infringement of the '265 patent has been willful;

O. An injunction against further infringement of the '265 patent;

P. That the '855 patent has been and continues to be infringed by Defendants;

Q. That Defendants' infringement of the '855 patent has been willful;

R. An injunction against further infringement of the '855 patent;

S. That the '414 patent has been and continues to be infringed by Defendants;

T. That Defendants' infringement of the '414 patent has been willful;

U. An injunction against further infringement of the '414 patent;

V. An award of damages adequate to compensate IBM for the patent infringement that has occurred pre verdict and for damages that occur post-verdict, together with pre-judgment interest and costs;

W. An award of all other damages permitted by 35 U.S.C. § 284, including

increased damages up to three times the amount of compensatory damages found;

X. That this is an exceptional case and an award to IBM of its costs and reasonable attorneys' fees incurred in this action as provided by 35 U.S.C. § 285; and

Y. Such other relief as this Court deems just and proper.

DEMAND FOR JURY TRIAL

IBM hereby demands trial by jury on all claims and issues so triable.

DATED this 18th day of September, 2019.

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