IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

INTERNATIONAL BUSINESS MACHINES CORPORATION,	)	
Plaintiff,	)	C.A. No. 21-461-LPS
v.	)	**JURY TRIAL DEMANDED**
RAKUTEN, INC., and EBATES PERFORMANCE MARKETING, INC. DBA RAKUTEN REWARDS,	)	
Defendants.	)	

SECOND AMENDED COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff International Business Machines Corporation ("IBM"), for its Complaint for Patent Infringement against Rakuten, Inc. and Ebates Performance Marketing, Inc. dba Rakuten Rewards ("Ebates Performance Marketing") (collectively, "Rakuten"), demands a trial by jury on all issues so triable and alleges as follows:

INTRODUCTION

1. IBM is in the innovation business. Every year, IBM spends billions of dollars on research and development to invent, market, and sell new technology. For example, through its investments and innovations in the new frontier of quantum information science, IBM is the leader in commercializing quantum computing, once thought to be a purely academic exercise. IBM's Q Network service—a community of Fortune 500 companies, academic institutions, research organizations, and startups working with IBM to advance quantum computing—now has over 100 members.

2. IBM obtains patents on the technology its inventors develop. IBM's commitment to research and innovation has resulted in numerous inventions that have led to the thousands of

patents awarded to IBM by the United States Patent Office each year. In fact, for each of the last 28 years, IBM scientists and researchers have been awarded more U.S. patents than those of any other company. Those patents are critical to IBM's business and its licensing philosophy.

3. For example, for over twenty years, IBM has been a strong proponent of open source technologies. IBM was a founding member of Open Invention Network, the largest patent non-aggression community in history, which supports freedom of action in Linux, a key element of open source software. IBM was able to leverage its patent portfolio to enable the broad industry adoption of open source technologies by pledging to provide open access to key innovations covered by hundreds of IBM software patents for those working on open source software. And early in 2020, IBM joined the License on Transfer Network ("LOT Network"), a non-profit community of companies that supports open innovation and responsible stewardship of technology. LOT Network affirms the traditional use of patents—safeguarding the innovations of companies who research, develop, and sell new technologies—while protecting its members against patent assertion entities who purchase or acquire patents from others.

4. As another example, IBM has pledged to let anyone working on solutions to the coronavirus pandemic use its patents for free. IBM's vast patent portfolio can now support researchers everywhere who are developing technologies to help prevent, diagnose, treat or contain COVID-19. The collection includes thousands of IBM artificial intelligence patents, some related to Watson technology, as well as dozens, if not hundreds, related to biological viruses.

5. IBM also believes in the protection of its proprietary technologies, which result from IBM's extensive investments in research and development and the hard work of IBM's employees. IBM believes that companies who use IBM's patented technology should agree to a license and pay a fair royalty. When a company is using IBM's patents without authorization,

IBM first seeks to negotiate an agreement whereby IBM and the other company each receive a license to the other's patent portfolio. That way, each company can avoid litigation, be fairly compensated for the use of all of their patents, and maintain freedom to operate in their respective markets.

6. IBM's research and development is currently focused on technology that includes quantum computing, big data analytics, artificial intelligence, and natural language processing. But IBM also has a long history of innovating and licensing its technology in the field of internet commerce. In fact, long before Rakuten, Inc. and its affiliates existed, IBM partnered with other companies to launch Prodigy, one of the very first e-commerce services. Rakuten, Inc., Ebates Performance Marketing, and Ebates Inc.—which were founded in 1997, 2011, and 2011 respectively, after e-commerce was already established—took those prior innovations made by IBM and others to create and run its new business. As its business has developed, Rakuten has incorporated additional innovations pioneered by IBM.

7. For almost six years, IBM has tried to negotiate with Rakuten about Rakuten's unlicensed use of IBM's patents. Dozens of similar companies, including Amazon, Apple, Google, and Facebook, have agreed to cross licenses with IBM. Unfortunately, Rakuten is not among them. Instead, to this day, Rakuten has chosen to willfully infringe IBM's patents and even expand its infringing activity.

8. Rather than negotiate with IBM, Rakuten has used a series of delay tactics. In July 2015, when IBM first informed Rakuten that Rakuten entities were infringing IBM's patents, Rakuten refused to take responsibility for the companies it controlled and told IBM to contact each of them individually. Then, Rakuten refused to meet with IBM by ignoring IBM's messages,

claiming vague scheduling conflicts, or deflecting responsibility from one Rakuten representative to the next.

9. Two years later, in 2017, IBM finally had the opportunity to present detailed evidence of Rakuten's infringement. In response, Rakuten refused to explain why it continued to infringe IBM's patents. When that approach was no longer tenable, Rakuten raised objectively unreasonable excuses for why it refused to negotiate. When IBM pointed out that Rakuten's excuses were flawed and included arguments that had been rejected in court, Rakuten reverted to delay tactics. In one instance in 2018, Rakuten finally agreed to meet with IBM after months of haggling over the attendees and the topics to be discussed, only to cancel at the last minute.

10. Rather than address its infringement of IBM's intellectual property, Rakuten attempted to strong-arm IBM by threatening existing relationships between the companies. Rakuten said it would blacklist IBM from future business opportunities if IBM did not drop the issue. Through this tactic too, Rakuten attempted to deflect responsibility from its own wrongful conduct.

11. Over the years, IBM has discovered that Rakuten infringes additional IBM patents. IBM has informed Rakuten of its expanding liability for willful patent infringement across its subsidiaries but has been continually met with delay and excuses. This conduct clearly demonstrates Rakuten has never taken the issue seriously.

12. After years of delay and excuses, Rakuten changed tactics. Rakuten told IBM that it had hired outside legal counsel and would no longer talk to IBM directly. In effect, Rakuten told IBM: "we will not deal with this issue; talk to our lawyers." That decision made it nearly impossible to resolve this matter through business negotiations. IBM has urged Rakuten to

reconsider many times, yet Rakuten refused IBM's invitations to explain Rakuten's infringement and to discuss an amicable business resolution.

13. After almost six years without meaningful progress toward a resolution, IBM has brought this lawsuit to finally end Rakuten's unauthorized use of IBM's patented technology.

NATURE OF THE CASE

14. This action arises under 35 U.S.C. § 271 for Defendants' infringement of IBM's United States Patent Nos. 7,072,849 (the "'849 patent"), 7,631,346 (the "'346 patent"), 6,785,676 (the "'676 patent"), 7,543,234 (the "'234 patent"), and 7,076,443 (the "'443 patent") (collectively, the "Patents-In-Suit").

THE PARTIES

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

16. Defendant Rakuten, Inc. is a Japanese corporation, with its principal place of business in Setagaya, Tokyo, Japan. Rakuten, Inc. is the ultimate parent company to Ebates Performance Marketing, and Ebates Inc.

17. Defendant Ebates Performance Marketing is a Delaware corporation with its principal place of business at Rakuten Crimson House West 800 Concar Drive., San Mateo, California, 94402.

18. Defendant Ebates Inc. is a Delaware corporation with its principal place of business at 160 Spear Street, Suite 1900, San Francisco, CA 94105.

JURISDICTION AND VENUE

19. IBM incorporates by reference paragraphs 1-18.

20. 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).

21. Venue is proper in this Court pursuant to 28 U.S.C. §§ 1391(b) and (c) and 1400(b). Ebates Performance Marketing and Ebates Inc. are entities organized under the laws of Delaware and reside in Delaware for purposes of venue under 28 U.S.C. § 1400(b). Additionally, Rakuten, Inc., Ebates Performance Marketing, and Ebates Inc. conduct business in Delaware, at least by offering for sale and selling products and services through their websites and mobile applications, which are accessible in Delaware. Infringement by Rakuten, Inc., Ebates Performance Marketing, and Ebates Inc. has occurred and continues to occur in Delaware.

22. Personal jurisdiction exists over Rakuten, Inc., Ebates Performance Marketing, and Ebates Inc. because those entities conduct business in Delaware, at least by offering for sale and selling products and services through their websites and mobile applications, which are accessible in Delaware, and because infringement has occurred and continues to occur in Delaware. Personal jurisdiction also exists over Ebates Performance Marketing and Ebates Inc. because those entities are organized under the laws of Delaware.

FACTUAL BACKGROUND

A. IBM Is A Recognized Innovator.

23. IBM is a worldwide pioneer in various sectors of science and technology. During IBM's over 100-year history, IBM's employees have included six Nobel laureates, six Turing Awards laureates, five National Medal of Science recipients, and fifteen inventors in the National Inventors Hall of Fame. IBM has been awarded the U.S. National Medal of Technology more times than any other company or organization—the U.S. National Medal of Technology is the nation's highest award for technological innovation.

24. IBM employees are responsible for technological advances that have become foundational technology that is widely incorporated into use by the global community 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, Garry Kasparov), Watson (the system that combined content analysis, natural language processing, information retrieval, and machine learning to beat two of *Jeopardy!*'s greatest human champions), and Summit (the world's fastest supercomputer when delivered to Oak Ridge National Laboratory in 2018 that has been employed to tackle society's largest problems from the opioid crisis to COVID-19). Technology evolves quickly and the nature of research and development ambitiously seeks out new discoveries. The inventions that IBM unearths today lays the groundwork for tomorrow's technology.

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

25. IBM's research and development operations differentiate IBM from many other companies. IBM annually spends billions of dollars for research and development. In addition to yielding inventions that have literally changed the way in which the world works, IBM's research and development efforts have resulted in more than 80,000 patents worldwide.

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

27. 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.

28. 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 Presenting Applications And Advertisements In An Interactive Service While Developing The PRODIGY Online Service.

29. The inventors of the '849 patent developed the patented technologies as part of IBM's efforts to launch the PRODIGY online service ("Prodigy"), a forerunner to today's Internet, in the late 1980s. The inventors believed that to be commercially viable, Prodigy would have to provide interactive applications to millions of users with minimal response times. The inventors believed that the "dumb" terminal approach that had been commonly used in conventional systems, which heavily relied on host servers' processing and storage resources for performance, would not be suitable. As a result, the inventors sought to develop more efficient methods of

communication that would improve the speed and functionality of interactive applications and reduce equipment capital and operating costs.

30. In light of the above considerations, the inventors developed novel methods for presenting applications and advertisements in an interactive service that would take advantage of the computing power of each user's PC and thereby reduce demand on host servers, such as those used by Prodigy. The inventors recognized that if applications were structured to be comprised of "objects" of data and program code capable of being processed by a user's PC, the Prodigy system would be more efficient than conventional systems. By harnessing the processing and storage capabilities of the user's PC, applications could then be composed on the fly from objects stored locally on the PC, reducing reliance on Prodigy's server and network resources.

31. The service that would eventually be called Prodigy embodied inventions from the '849 patent when it launched in late 1988, before the existence of the World Wide Web. The efficiencies derived from the use of the patented technology permitted the implementation of one of the first graphical user interfaces for online services. The efficiencies also allowed Prodigy to quickly grow its user base. By 1990, Prodigy had become one of the largest online service providers with hundreds of thousands of users. Prodigy was widely praised in the industry and is still held up as an example of innovation in computer networks that predated even the advent of the World Wide Web. The technological innovations embodied in this patent persist to this day and are fundamental to the efficient communication of Internet content.

32. Today, it is easy to take the World Wide Web, powerful computers, and high-speed network connectivity for granted. Not so in 1988, when the first application in the '849 patent's priority chain was filed. The World Wide Web had not even been conceived yet. Typical personal computers at the time had "512K RAM"—not 512 megabytes or gigabytes of RAM, but 512

kilobytes. '849 patent at 9:16-18. The '849 patent also describes the use of 1,200 to 2,400 bps (bits per second) modems to access a network—a far cry from today's high-speed internet. *Id.* at 9:18-20.

33. The limited processing power and network bandwidth available in 1988 posed significant technical obstacles to the development and adoption of network-based interactive services, in which many users may access interactive services provided by a host. *Id.* at 1:34-58. Accordingly, the '849 patent specifically identifies slowdowns in network response time caused by processing bottlenecks at the host as a problem to be solved:

> [I]n conventional time-sharing computer networks, the data and program instructions necessary to support user sessions are maintained at a central host computer. However, that approach has been found to create processing bottlenecks as greater numbers of users are connected to the network; bottlenecks which require increases in processing power and complexity; e.g., multiple hosts of greater computing capability, if the network is to meet demand. Further, such bottlenecks have been found to also slow response time as more users are connected to the network and seek to have their requests for data processing answered. *Id.* at 10:42-53; see also *id.* at 1:43-52, 10:54-57.

34. As the '849 patent also explains, simply adding additional computing capacity to the hosts is not enough to fix the bottleneck problem. "[E]ven in the case where additional computing power is added, and where response time is allowed to increase, eventually the host becomes user saturated as more and more users are sought to be served by the network." *Id.* at 10:58-61. In other words, even a host with additional computing capacity would still have limits on how many users it could support in conventional approaches.

35. Conventional approaches to providing advertising in interactive services exacerbated the bottleneck problem by clogging limited network bandwidth. In conventional approaches to advertising in interactive services, advertising had to compete with service application data for limited network bandwidth. *Id.* at 2:20-30. That competition between

advertising and service application data had "the undesirable effect of diminishing service response time." *Id.* at 2:25-26.

36. The bottleneck problem arises from the limitations of networks that rely exclusively on central hosts to satisfy users' data processing requests and the limited network bandwidth available at the time of the invention. Accordingly, the bottleneck problem addressed by the '849 patent is a "technical problem."

37. Before this suit, the '849 patent had been challenged three times on grounds of alleged patent ineligibility. Those challenges were all unsuccessful. In the matter of *IBM v. The Priceline Grp., Inc.*, C.A. No. 15-137-LPS (D. Del.), the defendants (collectively "Priceline") filed a motion to dismiss, alleging that the '849 patent was directed to unpatentable subject matter. The Delaware court denied Priceline's motion, finding that "Defendants have failed to meet their burden of demonstrating that . . . claim 1 of the '849 patent [is] devoid of inventive concepts." *IBM v. The Priceline Grp., Inc.*, 2016 WL 626495, at *24 (D. Del. Feb. 16, 2016).

38. In the matter of *Kayak Software Corp. v. IBM.*, CBM2016-00075, Priceline again challenged the '849 patent on alleged patent eligibility grounds, this time before the Patent Trial and Appeal Board ("PTAB"). Just like in the district court, the PTAB rejected Priceline's challenge. The PTAB "agree[d] with Patent Owner the disclosure of the '849 patent itself is almost exclusively directed to solving a problem arising in computer technology (i.e., bandwidth) with a computerized solution (i.e., local storage)." *Kayak Software Corp. v. IBM.*, CBM2016-00075, Paper 16 (PTAB Dec. 15, 2016)) at 19. The PTAB thus concluded, "Petitioner has not shown sufficiently that independent claims 1 and 21 are directed to an unpatentable 'abstract idea' . . . ." *Id.* at 20.

39. Although the parties filed other summary judgment motions in the Priceline case, Priceline chose not to file a summary judgment motion to challenge the patent eligibility of the '849 patent.

40. In the matter of *IBM v. Groupon, Inc.*, C.A. No. 16-122-LPS (D. Del.), Groupon, Inc. ("Groupon") moved for judgment on the pleadings that the '849 patent was directed to ineligible subject matter. The court denied Groupon's motion, finding that "the asserted claims for the Filepp patents are not directed to an abstract idea and are directed to patent-eligible subject matter." *IBM v. Groupon, Inc.*, 289 F. Supp. 3d 596, 607 (D. Del. 2017).

E. IBM Invented Methods For A Runtime User Account Creation Operation Using A Single-Sign-On (SSO) Process In A Federated Computer Environment.

41. The inventors of the '346 patent developed the patented technology as part of IBM's efforts to improve single-sign-on technology. Online service providers, like website operators, typically use "sign-on" operations to manage access to protected resources, like confidential webpages. '346 patent at 6:26-30. A user signs-on by providing authentication credentials, such as a username and password, which the service provider verifies to authenticate the user's identity. *Id.* at 6:31-36. Then, the service provider can determine whether the identified user has authorization to access the protected resource and, if so, grants access. *Id.* at 6:37-43, Fig. 1C. Although that process has become commonplace, it is time consuming for users to sign-on every time they wish to access a protected resource. *Id.* at 1:25-33.

42. One way to address the shortcomings of repetitive sign-on operations is to authenticate users for an entire "session," i.e., a series of multiple transfers of information between the server and the client. *Id.* at 1:53-61, 6:17-22. That technology is called ***single***-sign-on because users are only required to sign-on once per session. *Id.* at 1:53-61. For example, users could enter a user name and password on the homepage of a service provider and request multiple protected

webpages without reentering their credentials. But prior art single-sign-on methods were problematic because they required users to have preexisting user accounts at the service provider. *Id.* at 2:19-42.

43. As Dr. Heather Hinton, first named inventor of the '346 patent, testified in prior proceedings, prior art systems could not take advantage of the full benefits of single-sign-on because of this fundamental problem.

44. The inventors of the '346 patent sought to develop single-sign-on technology that would permit a new user of a service provider to access protected resources. They developed novel methods for systems interacting within a "federated computing environment" to trigger a single-sign-on operation on behalf of a user that would obtain access to a "protected resource" and create an account for the user. The specification discloses how to structure a "federated computing environment" using a nonconventional arrangement of computer components. *Id.* at 10:62-11:7, 11:28-35. The specification describes a "protective resource" using precise technical terms that demonstrate "how" to solve the limitations of prior art single-sign-on operations. *Id.* at 5:60-67, 6:26-30, 8:45-48, 11:28-35. And it specifies the "ordered combination" of technical steps necessary to implement the claimed embodiments. *See, e.g.*, *id.* at Figs. 9, 11.

45. One implementation of the '346 patent involves using "tokens" to facilitate such interactions. "A token provides direct evidence of a successful operation and is produced by the entity that performs the operation, e.g., an authentication token that is generated after a successful authentication operation. A Kerberos token is one example of an authentication token that may be used with the present invention." *Id.* at 8:49-54. Such binary security tokens can implement web services message-level security. When a user accesses a service provider and signs into the identity provider via single-sign-on operations, the identity provider authenticates the user. The identity

provider provides a token to the service provider "to provide proof of authentication of a user." *Id.* at 22:15-19. The service provider would in turn, "translate" the identity provider's token into a "locally valid user identifier . . .based on information contained in the [] token" in order to "build a local session for the user." *Id.* at 24:16-25:3. After the user has been found to be authenticated by the identity provider, the system provider can then create an account for the user at the service provider, thus bypassing any requirement for the user to directly create an account at the service provider. The '346 patent thus extends the benefits of single-sign-on technology to allow the user to access protected resources at any number of service providers without having to first set up a user account.

46. To date, the '346 patent had been unsuccessfully challenged on grounds of alleged patent ineligibility. In the matter of *IBM v. The Priceline Grp., Inc.*, C.A. No. 15-137-LPS (D. Del.), Priceline filed a motion to dismiss, alleging that the '346 patent was directed to unpatentable subject matter. The Delaware court denied the motion, finding the patent was not directed to an abstract idea; "the true heart of the invention is the utilization of SSO technology to automatically create an account at the service provider level on behalf of users who did not previously have such accounts, all in order to allow the user to access protected resources at the service provider." *IBM*, 2016 WL 626495, at *16. The Court also rejected the argument that the claim did not contain inventive aspects: "The specification describes the improvement over the prior art encompassed by the invention as the 'eliminat[ion] [of] these prerequisites' because while '[i]n the prior art, the service provider cannot automatically create an active session for the user and allow access to protected resources; with the present invention, the service provider dynamically performs a runtime linked-user-account creation operation at the service provider by creating a linked user

account based on the user identity . . . that has been provided by the identity provider to the service provider[.]'" *Id.* at *19.

47. Although the parties filed summary judgment motions in the *Priceline* case, Priceline chose not to file a motion to challenge the patent eligibility of the '346 patent.

48. In the *IBM v. Groupon* case, Groupon chose not to file any motions challenging the patent eligibility of the '346 patent at the pleading stage or at the summary judgement stage. The case proceeded to trial. The jury rendered a verdict of willful infringement and no invalidity on all four of the patents-in-suit, including the '346 patent, thus further showing the continued importance and relevance of the invention of the '346 patent to modern network technology.

49. The matters of *IBM v. Expedia* and *IBM v. Airbnb* also involved the '346 patent. None of the defendants in those litigations filed motions that challenged the patent eligibility of the '346 patent.

50. The Federal Circuit has interpreted the claims of the '346 patent in an appeal concerning two final written decisions issued by the PTAB. In reversing the PTAB's finding that a subset of claims of the '346 patent were anticipated by prior art, the Federal Circuit explained that the '346 patent solves "the special challenges of providing single-sign-on capabilities in a 'federated' environment,'" which the court understood as an environment containing different enterprises that "adhere to certain standards of interoperability." *IBM v. Iancu*, 759 F. App'x 1002, 1004-1005 (Fed. Cir. 2019). The Federal Circuit distinguished how the prior art approached authentication from how the '346 patent solved the problem by looking at how the claimed "federated computing environment" and "single-sign-on" operated in the context of the invention. *Id.* at 1007-1009. The Federal Circuit's opinion confirms that the '346 patent is directed to a non-

abstract computer-specific problem and involves innovation in "how" to solve the limitations of prior art single-sign-on techniques.

F. IBM Invented Methods For Improving Searching Using Real-Time Incorporation Of Contextual Information.

51. The inventor of the '676 patent developed the patented technology as part of IBM's efforts to improve search mechanisms for customer self-service search and retrieval systems. Customer self-service 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 could be improved by incorporating relevant contextual information about the user. At the time of the invention, conventional customer self-service search and retrieval systems required users to input their contextual information when conducting each search query. However, these prior art search mechanisms failed to utilize the contextual information to rank search results and did not change these rankings over time, even as the user's contextual information changed. The prior art search mechanisms ranked search results without adapting to the current state of the user's interactions with the system and, therefore, failed to prioritize the search results most relevant to the user.

52. The inventor of the '676 patent recognized a need for an improved method of annotating and ranking search results in real-time using up-to-date contextual information about the user. The inventor of the '676 patent developed systems and methods of classifying a user's context—by using a search query and raw contextual information inputted by the user and comparing this information against both the interaction history of the user and data from a context attribute database—to generate a set of context parameters that are specific to the current user. The technology of the '676 patent also provides for more efficient retrieval of search results through the use of an adaptive algorithm, which maps specific search results not only to the user's

search query, but also to a user context vector containing the context parameters for the user. Moreover, the technology of the '676 patent comprises systems and methods for generating a more specific, accurate, and personalized set of search results using an ordering and annotation function which ranks the search results based on the user context, and is executed interactively, each time that a user inputs a new search query. The invention of the '676 patent applies machine learning technology to the customer self-service system using a combination of supervised and unsupervised logic, thereby enabling the system to adapt how it ranks resources in accordance with a user's changing context, without requiring the user to explicitly input contextual information. The systems and methods of the '676 patent provide for a more efficient search and retrieval process, which greatly reduces the user time and resource intensive system processes required to provide relevant search results.

53. Machine learning technology is central to the '676 patent. Machine learning can be thought of as a way to analyze rows and columns of information to predict the results that would be most appropriate for the user. Each row corresponds to a specific data item, and each column corresponds to an attribute to be predicted. For any given problem, one of the columns may correspond to a target attribute value that the system wants to predict at a particular point in time. The approach for collecting and processing the data to populate the necessary rows and columns, and predict the target attribute values was a persistent challenge to persons of ordinary skill in the art at the time. More specifically, because the user's open-ended interactions with the search system (such as selecting icons on the user interface, entering queries into the query box, etc.) do not easily translate into the fixed set of columns utilized by the machine learning model, an innovative approach is required to map these types of data.

54. One innovative aspect of the system of the ’676 patent is the use of a user context vector containing both data associated with a user’s interaction state and contextual data about a user. The user context vector would populate a wide variety of contextual information specific to a particular user through a back-and-forth interaction between the user and the computer system as the user interacts with the customer self-service system. Through the user context vector of the patented invention, the system was able to combine heterogeneous data about a user from a wide variety of sources (such as the user’s background, skill level, intentions and goals, history of searching, trajectory of previous learning through the curriculum’s course materials, etc.), which is not structured as a fixed vector of data values, and thus is not directly usable by a conventional learning algorithm. One of the innovations was to transform this user history and other data into a fixed length vector, which is directly usable by a learning algorithm. The heterogeneous data is transformed into a homogeneous data structure with strong predictive value regarding the user’s interests. In other words, the system had the ability to look at a user’s past history of interaction, and translate each interaction or data point into a different aspect of the user’s overall context, thus comprising a machine-learning algorithm that could intelligently predict which resources are best suited to the user.

55. Another innovative aspect of the invention of the ’676 patent is the utilization of the user context vector in order to execute an ordering and annotation function. The system of the patented invention would map the user context vector with a set of responsive search results in order to generate an annotated set of resources, or search results. The annotations affect, among other things, the order that the resources are presented to a user of the system, and is a particular way of summarizing and presenting information from the returned resources in electronic devices. This method of going from a user context vector to a particular set of resources solved the “more

is not always better" problem of info overload in search systems at the time, by returning a set of information that was not only ordered in a meaningful manner specific to the user, but also annotated for the system and the user.[1]

G. IBM Invented Methods And Systems For Stacking Portlets In Portal Pages.

56. 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 on computer screens, tablets, mobile devices, and other media allow the display of dynamically updated information aggregated from different sources 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 resulted in cluttered portal pages that inhibited 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, information sources, or static areas of display.

57. 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 portlets on a portal page. That method includes determining whether a subset of portlets is stackable. The inventors realized that portlets could be stackable if they have certain characteristics in common, such as

[1] For a more detailed discussion of the computer-specific problems to which the claims are directed and inventive aspects therein, see the Declaration of Dr. Daniel Oblinger, submitted in *IBM v. Zillow Grp., Inc.*, C.A. No. 2:20-cv-01130 (W.D. Wash.) (attached hereto as Ex. G).

common hardware resources accessed, software resources accessed, content elements, or markup elements. A group of stackable portlets could then be arranged into a stack on the GUI. In a stack, multiple portlets could be grouped together such that two or more portlets occupy less space than they would individually, thereby reducing portlet clutter. The user may navigate between the portlets that comprise a stack of portlets using selection methods such as forward and back buttons or a scroll bar. One portlet in a stack could be presented at the top of the stack at a given time. Alternatively, multiple portlets in the stack could be presented at the top of the stack at once. For example, forty portlets could be stacked with five portlets presented at a time. Multiple stacks of portlets are then arranged into a stack of stacks of portlets. The method could provide a control for the user to select a different stack of portlets not currently presented to the user from the stack of stacks of portlets.

58. By developing a method for stacking stacks of portlets and allowing users to select which stack 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 prefer—without overcrowding their device screens. 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 preferences.

59. In order to implement this invention, the inventors of the ’234 patent developed a particular approach and corresponding software framework that combined several key features.

60. First, in the invention of the '234 patent, the graphical user interface comprises a portal page that is dynamically generated. The portal page aggregates information from a variety of different sources, and the generation of the portal page is "dynamic" because when the user returns to the portal page, the portal pulls the most current information from each information source displayed on the page. *See* '234 patent at 1:11-13. When the data changes at its source, the portal page updates to reveal that change to the user, without an explicit request from the user. This is in contrast to earlier graphical user interfaces such as basic file and directory structures of a browser hierarchy, where the user was required to manually organize each piece of information into static folders, and return to each individual source to pull updated information as the sources changed. By dynamically generating the portal page, the user is relieved of the burden of having to manually stipulate the information sources and organize them on the page.

61. In enabling these dynamic updates, the '234 patent describes that the portal can be generated based on the information contained within a user profile. *See* '234 patent at 2:40-44. The user profile stores customized information relating to the user's interests and requirements. In this way, the portal is automatically and dynamically generated to contain information that is current and customized for the user. And further, the computer system may detect the user's identity and interests without even requiring the user to login (such as by placing a "cookie" on the user's computer system). *Id.* at 2:42-44. When the user revisits the portal page, it is automatically reconstructed and updated without requiring the user to manually reconfigure the page content (for example, by re-entering search terms) or layout (for example, by adjusting the location of page components).

62. Second, in the invention of the '234 patent, the computer systems determine the optimal manner to organize groups of portlets into "stacks" by determining which portlets are

"stackable." In this process, the system automatically identifies whether there exists a set of common attributes across a set of portlet data items, and if so, the data items with common attributes are gathered together into stacks of related items. *See* '234 patent at 1:46-49. The common attributes used to determine whether portlets are stackable may relate to various properties of portlet data items, including those relating to software, hardware, content, and markup. *Id.*

63. This is in contrast to prior art search interfaces, such as the basic search interface or the user-defined filtering interface, where either the computer system will retrieve only the data items that precisely fit each of the specific search parameters specified by the user, and organize them into one basic, scrollable list, or where the user is required to specify a complicated rule set of filters that determines how incoming data items are sorted on the graphical user interface. By inventing a computer system that automatically determines whether portlets are "stackable," the computer system is able to present large quantities of information from disparate sources on the graphical user interface in the manner that is most logical, with no user input required. And by grouping related portlets into a stack that is displayed together within the portal page, the user can better visualize the relationship between data items of interest, thereby facilitating the selection of individual portlet items of interest.

64. The common attributes that are used to determine whether portlet data items are stackable can also be derived from a user profile or from user preferences. *See* '234 patent at 4:57-5:3. By allowing the user profile and/or user preferences to influence the determination of stackable portlets, the portal page can be automatically customized to the user's interest.

65. Third, in the invention of the '234 patent, a group of portlets with sufficient attributes in common are first arranged into a "stack," and each stack is then arranged on the

graphical user interface into a "stack of stacks." *See* '234 patent at 8:16-27. In contrast to earlier graphical user interface displays, such as simple data lists sortable by a single attribute, the user of the system of the '234 patent can browse through information that has been organized by multiple dimensions.

66. Generating the portal page as a stack of stacks also reduces clutter and crowding in the display of the graphical user interface. Instead of generating a display that concurrently displays multiple stacks of related portlet data items separately (where each stack of portlets may be of interest to the user at some time), the invention disclosed in the '234 patent groups related stacks of portlets into a further level of organization, or a stack of stacks. Crowding and clutter in the display is therefore reduced because only a first stack is initially presented to the user, instead of multiple concurrently displayed stacks.

67. Fourth, in the invention of the '234 patent, a first stack of portlets is presented to the user at a time, and the graphical user interface also features a control that the user can manipulate in order to view a second stack of portlets that is not currently presented. *See* '234 patent at 8:25-27. In this manner, the user can easily switch between the portlet data items presented in each stack. This substantially eases the user's transition between different views of data within the portal page, without introducing clutter and crowding to the display. Furthermore, if the first presented stack of portlets does not conveniently fulfill the user's information need, the user can easily transition to a different view that better matches their need. This is an improvement over earlier graphical user interface display systems such as a data list sortable by a single attribute, wherein the user is required to manually scroll through all of the listings responsive to their search.[2]

[2] For a more detailed discussion of the computer-specific problems to which the claims are directed and inventive aspects therein, see the Declaration of Dr. Andrew Cockburn, submitted in *IBM v. Zillow Grp., Inc.*, C.A. No. 2:20-cv-0851 (W.D. Wash.) (attached hereto as Ex. H).

H. IBM Invented Unconventional Methods For Targeting Users With Highly Relevant Advertising By Leveraging The Characteristics Of Search Results Rather Than Merely Matching Search Queries.

68. The inventors of the '443 patent developed the patented technologies as part of IBM's efforts to improve Internet search engine technology in the area of e-commerce solutions and, in particular, targeted advertisements. Prior to the inventions of the '443 patent, with the accelerated growth of the Internet and its associated e-commerce activities, advertising over the Internet became increasingly more acceptable to Internet users, and marketing professionals looked for ways to optimize online advertising. But the technology used to deliver targeted advertisements to Internet users presented unique challenges—different from those faced by offline advertising (such as person-to-person marketing)—because computers must determine appropriate ads based largely on the users' behaviors while browsing the Internet.

69. One prior art solution to the challenges faced by internet advertisers involved building user profiles with cookies to generate banners ads. Internet advertisers built a user profile by extracting data about the user from the user's browsing behaviors. When the user browsed a particular website, the website placed on the user's computer a small piece of data (a "cookie") from the user's browsing session on that website. When the user returned to that website, the website retrieved the cookies associated with that user to determine the user's interests. These cookies comprised the user's "user profile"—a snapshot of the user's interests derived from their browsing behaviors. For example, a user might visit the website www.sears.com looking for a dishwasher. The website stored a cookie on the user's computer indicating that the user is interested in dishwashers. If the user later returned to www.sears.com, the website retrieved the cookie from the user's computer and determined that the user was interested in dishwashers.

70. At the time of the invention of the '443 patent, advertisers typically used cookies to build user profiles. The advertisers then used those user profiles to generate banner ads. Banner

ads are advertisements embedded into a website, typically appearing on a site as a bar, column, or box. An early banner ad is seen in the image below:

(https://www.theatlantic.com/technology/archive/2017/04/the-first-ever-banner-ad-onthe-web/523728/).

71. Advertisers presented banner ads according to the user's user profile, on the assumption that the user profile accurately represented the user's interests. For example, a user might have a user profile indicating that they are interested in dishwashers. When the user visited www.sears.com, the website detected this attribute in the user's user profile and presented a banner ad on the website advertising dishwashers.

72. Although user profiling and banner ads were a popular form of internet advertising at the time of the invention of the '443 patent, they suffered from numerous drawbacks. A website displayed banner ads to a user whether or not the user solicited them, which annoyed users who did not want to see any ads or who preferred to view ads only if the user requested them. User profiling was also burdensome and time-consuming to carry-out, especially for website owners who were not tech savvy or lacked the required resources. Moreover, user profiling and banner ads were typically only effective on websites that had high user traffic, since building comprehensive and informative user profiles required extensive interactions between many users and the website.

73. Additionally, user profiling and banner ads were often not aligned with the user's actual interests. For example, a user might visit www.sears.com and search for a dishwasher. The website stored a cookie indicating that the user is interested in dishwashers. The user then left the

website and purchased a dishwasher in-person from a different store. When the user returned to www.sears.com in search of an air conditioner, the website retrieved the user's cookie and mistakenly concluded that the user is still interested in a dishwasher. Advertisers therefore had difficulty keeping user profiles and banner ads aligned to a user's current interests. User profiling and banner ads also failed to account for offline purchases and untracked online purchases. For example, the website could not determine if a user bought a particular product in-person at a store, disabled cookies on their browser before making a purchase, or simply chose to browse anonymously.

74. The inventors of the '443 patent developed a novel and unconventional approach to delivering advertisements over the Internet that overcame the limitations of user profiling and banner advertisements. The inventors' core philosophy was at odds with the banner advertisements that were prevalent at the time of the invention of the '443 patent. The '443 patent explains that "unlike the prior art methods of selecting and displaying banner ads predicated on user profiles, these profiles need not be relied upon. Instead the initial search results themselves are utilized." '443 patent at 5:16-19. The patent goes on to state that "[t]he invention's philosophy relies on the principle that users who are performing a search query have a special interest in finding a particular piece of information. From this one may deduce that if a user is interested in a specific piece of information, he or she may be interested in related or similar advertisements." *Id.* at 5:11-16. The patent describes the patented invention as "a new method and apparatus for associating search result items with similar or related advertisements." *Id.* at 1:63-65. The core idea behind the '443 patent was therefore an unconventional departure from the conventional internet advertising techniques of user profiling and banner advertisements.

75. The patent describes the unconventional technique of generating internet advertisements based off the results of a user search. First, a user performs a search. If the search returns a search result, the system performs a search for related advertisements using that search result. For example, a user may search "washer machine" and get three search results, named WashMax, CleanMaster, and HousePro. The system could use the information contained in the "WashMax" search result to search for advertisements related to that particular search result. The system could repeat the advertisement search for both the CleanMaster and HousePro search results.

76. The system can also place a Graphical User Interface ("GUI") button next to each search result. If the user clicks a search result, the system returns information for that search result. On the other hand, if the user selects the GUI button next to the search result, the system initiates a search of the advertised database using the search result as a search parameter, and displays to the user advertisements relating to that search result.

77. The '443 patent describes a detailed algorithm for performing this unconventional method of delivering internet advertisements based on search result items in a computing environment. First, a "user initially submits a query" which is then "forwarded to the user/session manager subsystem [] which then forwards it on to [the] search engine." *Id.* at 6:27-31. The "search engine [] performs an Internet search and produces a search results set" which is then "forwarded [] to the product matching manager." *Id.* at 6:31-34. "The product matching manager [] takes the search engine results set and attempts to match at least one product to each of the search result items" by "communicat[ing] with the product database []." *Id.* at 6:35-38. Then, "[f]or each match found, the product matching manager [] flags the corresponding search result item" and "[t]his flag is used by the request server . . . to display a graphical user interface ['GUI'] designator

. . . ." *Id.* at 6:49-54. After that, "[t]he request server [] builds a results page which contains the search result items, and if the search result item was flagged as [] having a product match, a [] graphical user interface ['GUI'] designator is also displayed for subsequent user selection. The search result items and associated product icons are then displayed [] to the browser . . . ." *Id.* at 7:11-17.

78. The '443 patent also describes how the invention uses the computer-specific process of caching in an inventive way to implement the unconventional method of delivering associated advertisements based on search result items. The '443 patent states that a "caching component [] may be used to expedite the matching process." *Id.* at 6:44-45. The '443 patent further explains that "[t]his additional caching component stores frequent advertising queries, using the URL of the search result item as a unique key identifier." 6:47-49. The patent recognizes that a computer has limited time and resources to retrieve information and presents an unconventional method of using caching to search for advertisements using the search result items in a time and resource- efficient manner. The patent explains that "performance of the implementation is time sensitive," and therefore "the complete product list is not associated with each search result item [immediately]," but instead "[t]he caching component may be adapted to yield a TRUE or FALSE designation to the user depending on whether related advertisements exist for the URL of a particular search result item." *Id.* at 6:54-60. The '443 patent goes on to explain that "[e]very result for an advertisement is stored in the caching component. Advertising queries issued from the product matching manager [] perform a first inquiry in the caching component database, and then a full advertising query if no information is found in the caching component database for the particular search result item." *Id.* at 6:60-65. The invention therefore applies

caching in an inventive way to improve the delivery of advertisements over the internet within a computer context.

79. The ’443 patent also describes how the invention uses the computer-specific technique of “batch processing” in an inventive way to implement the unconventional method of delivering advertisements related to search result items over the Internet. The patent explains that “the product matching manager [] may be adapted to perform an off-line batch process for each search result item in the search engine repository. The product database [] and the search engine repository are synchronized for this alternative approach. For example, for any new product advertisements, the product matching manager would update the cache.” *Id.* at 6:66-7:5. The invention therefore applies batch processing in an inventive way to improve the delivery of advertisements over the internet within a computer context.

80. The ’443 patent further describes how the unconventional method of delivering advertisements associated with search result items improves internet advertising. The patent states that “the implementation of this methodology will establish a new avenue for generating revenue from Internet advertisements.” *Id.* at 1:65-67. Unlike user profiling and banner advertisements, generating advertisements based on the search result items themselves gives any website—no matter how small or infrequently visited—the ability to generate advertisements and ad revenue as long as the website has some type of search engine. As the ’443 patent states: “[U]nlike the current user profiling methods, all web site owners who provide search engine services will be able [to] make use of the instant invention, independent of whether user profiling information can be obtained.” *Id.* at 2:1-4.

81. The invention also more closely aligns the advertisements with the user’s interests, since unlike user profiles, “search results provide a more narrowly defined basis for selecting target

advertisements for each user." *Id.* at 5:20-21. Internet advertisers no longer have to rely on potentially outdated user profiles to generate unsolicited banner ads that may not even reflect the interests of the user. Instead, internet advertisers can use the unconventional methods of the '443 patent to find relevant advertisements for a particular user by using search result items returned to the user through a user-initiated search. Therefore, the systems and methods of the '443 patent are inventive and unconventional.[3]

82. In *Chewy, Inc. v. International Business Machines Corp.*, C.A. No. 1:21-cv-01319-JSR (S.D.N.Y.) ("Chewy Litigation"), Chewy moved to dismiss IBM's counterclaims with respect to the '443 patent on the ground that the asserted '443 claims were invalid as patent ineligible. Chewy Litigation at D.I. 49, 50. The United States District Court for the Southern District of New York denied Chewy's motion. Chewy Litigation, D.I. 66 at 32.

I. Rakuten Became A Major E-Commerce Company By Using IBM's Patented Inventions.

83. Rakuten connects consumers wishing to make purchases of products with providers of those products. Rakuten has grown rapidly and now has billions of dollars of revenue per year.

84. Rather than developing its own technologies, Rakuten appropriated the inventions of the Patents-In-Suit. Rakuten websites, including at least www.rakuten.com, use the technology claimed by the Patents-In-Suit to provide cash back offers for everyday consumer products. Rakuten mobile applications, including at least mobile applications running on, for example, Apple iOS and Google Android operating systems, use the technology claimed by the Patents-In-Suit to provide similar cash back offers on products.

[3] For a more detailed discussion of the computer-specific problems to which the claims are directed and inventive aspects therein, see the Declaration of Dr. Douglas Schmidt, submitted in *Chewy, Inc. v. IBM*, C.A. No. 1:21-cv-01319 (S.D.N.Y) ("Chewy Litigation"), attached hereto as Ex. J. Also see excerpts of Exhibit 3 to the Rebuttal Expert Report of Dr. Douglas Schmidt submitted in the Chewy Litigation, attached hereto as Ex. W.

1. Relationship Between Rakuten Entities

85. Rakuten, Inc. is the ultimate parent of Ebates Performance Marketing and Ebates Inc.

86. Ebates Performance Marketing is a wholly-owned subsidiary of Ebates Inc.

87. Ebates Inc. is a subsidiary of Rakuten Marketing LLC.

88. Rakuten Marketing LLC is a subsidiary of Rakuten USA, Inc.

89. Rakuten USA, Inc. is a subsidiary of Rakuten, Inc.

90. In October 2014, Rakuten fully acquired Ebates Inc., a provider of a leading membership-based online cash-back site, named Ebates, in the United States.[4] On information and belief, since 2014, Rakuten, Inc. has held 100% of Ebates' outstanding voting stock.[5] Rakuten, Inc. has integrated its existing business assets and technologies with Ebates,[6] including the Rakuten mobile apps and www.rakuten.com.

91. Rakuten, Inc. establishes "systems to ensure the appropriateness of operations of subsidiaries of the company submitting financial reports (including risk management systems)."[7] As one example, Rakuten, Inc. "stipulates the Rakuten Group Regulations and other internal regulations dealing with company ideals, Group governance, company management, risk management, [and] compliance"[8] of its subsidiaries' operations. The Rakuten Group Regulations are common rules for Rakuten, Inc. and its subsidiaries (including at least Ebates Performance Marketing and Ebates Inc.) and cover areas such as compliance with laws and regulations, labor practices, information security, quality management, sustainability and more.[9] Important business

[4] https://global.rakuten.com/corp/about/history.html (attached hereto as Ex. K).
[5] https://global.rakuten.com/corp/news/press/2014/0909_02.html (attached hereto as Ex. L).
[6] https://global.rakuten.com/corp/news/press/2014/0909_02.html (attached hereto as Ex. L).
[7] Rakuten 2019 Corporate Report page 37 (attached hereto as Ex. M).
[8] Rakuten 2019 Corporate Report page 38 (attached hereto as Ex. M).
[9] Rakuten 2019 Corporate Report page 40 (attached hereto as Ex. M).

operations of Rakuten, Inc.'s subsidiaries are conducted in accordance with the "Rakuten Group Table of Duties and Authorities" and the "Rakuten Group Guidelines." Rakuten, Inc.'s Board of Directors "oversees overall compliance" with the Group Regulations.[10]

92. Rakuten subsidiaries also comply with a system of decision-making by Rakuten, Inc., and also report to Rakuten, Inc.'s Internal Audit Department, an organization under the direct control of the President and Representative Director of Rakuten, Inc. This system ensures cooperation with the internal audit departments of subsidiaries and ensures the appropriateness of the subsidiaries' operations by conducting internal audits throughout the Rakuten Group.[11]

93. Rakuten, Inc., has also established the Rakuten Group Ethics Charter, which includes policies and guidelines covering all areas of its subsidiaries operations including legal compliance, labor practices, information security, quality management, and sustainability.[12]

94. Rakuten, Inc. has also appointed a Chief Compliance Officer to oversee Rakuten, Inc.'s subsidiaries under the supervision of the Chief Operating Officer, and a Company Compliance Officer for each Rakuten subsidiary. The Company Compliance Officer is responsible for the overall management of the Group. The Company Compliance Officer works with the Function Chief Compliance Officer to promote compliance programs and actionable monitoring, and is responsible for strengthening the Group-wide compliance system.[13]

95. Rakuten, Inc., has also established committees for quality improvement and quality assurance with the participation of Rakuten, Inc. and Rakuten, Inc.'s subsidiaries. The Quality Improvement Committee monitors quality and shares best practices to promote the implementation

[10] Rakuten 2019 Corporate Report page 40 (attached hereto as Ex. M).
[11] Rakuten 2019 Corporate Report page 38 (attached hereto as Ex. M).
[12] Rakuten 2019 Corporate Report page 40 (attached hereto as Ex. M).
[13] Rakuten 2019 Corporate Report page 40 (attached hereto as Ex. M).

of measures and ensure their penetration into each service. The Quality Assurance Committee discusses the establishment, revision, and abolition of standards and guidelines, as well as the evaluation and improvement of measures across Rakuten, Inc., and its subsidiaries.[14]

96. Rakuten, Inc. has Audit & Supervisory Board Members who check the operations of Rakuten, Inc. and its subsidiaries.[15]

97. On information and belief, many of Rakuten's entities, including the Defendants, have overlapping governance, including overlapping executives and directors. For example, there are multiple individuals who simultaneously serve in executive roles and on boards of directors of more than one Rakuten entity.

98. On information and belief, Amit Patel serves as the Chief Executive Officer of Rakuten USA, Inc., the Chief Executive Officer of Ebates Performance Marketing, and the Chief Executive Officer of Ebates Inc.

99. On information and belief, Hiroshi Mikitani serves as the Chairman, Representative Director, and Chief Executive Officer of Rakuten, Inc. and a Director of Rakuten USA, Inc.

100. On information and belief, Adrienne Coulson serves as the Chief Operating Officer of Ebates Performance Marketing and the Chief Operating Officer of Rakuten USA, Inc.

2. Defendants' Infringing Actions

101. Rakuten, Inc. offers a "'Rakuten Ecosystem' that encourages users to enjoy multiple services offered by the Rakuten Group."[16]

102. The services offered by the Rakuten Group include services available to customers and users on the Rakuten mobile applications and Rakuten website (www.rakuten.com).

[14] Rakuten 2019 Corporate Report page 48 (attached hereto as Ex. M).
[15] Rakuten 2019 Corporate Report page 37 (attached hereto as Ex. M).
[16] https://global.rakuten.com/corp/about/history.html (attached hereto as Ex. K).

103. Rakuten, Inc.'s business is membership-based, and members are able to enjoy a range of services including e-Commerce, travel, digital content, and financial services, through common log-in IDs and the Rakuten Super Points program, which forms the core of its "Rakuten Ecosystem."[17]

104. The Rakuten Ecosystem has a global membership of 1.4 billion people formed by linking various services through Rakuten, Inc.'s membership base.[18]

105. Rakuten, Inc. manages IDs and payment functions to provide its users with the ability to utilize the same accounts/IDs with various services in the Rakuten Ecosystem.[19] According to Rakuten, Inc., the "cross-use of services reduces customer acquisition cost (CAC), while the points effect drives growth in spending per customer and the continued use of services."[20]

106. The Rakuten Ecosystem's Core Business Operating Income, which includes Rakuten Rewards (Ebates), was approximately 134.2 million yen in 2019.[21]

107. Rakuten, Inc. owns the domain for the Rakuten website (www.rakuten.com).[22]

108. Former versions of the www.rakuten.com website in the last six years indicate that Ebates Inc. owned and operated www.rakuten.com by displaying Ebates Inc. at the footer of the website.[23]

[17] https://global.rakuten.com/corp/news/press/2014/0909_02.html (attached hereto as Ex. L).
[18] Rakuten 2019 Corporate Report page 8 (attached hereto as Ex. M).
[19] Rakuten 2019 Corporate Report page 13 (attached hereto as Ex. M).
[20] Rakuten 2019 Corporate Report page 13 (attached hereto as Ex. M).
[21] Rakuten 2019 Corporate Report page 7 (attached hereto as Ex. M).
[22] https://www.whois.com/whois/rakuten.com (attached hereto as Ex. N).
[23] Screenshot of prior version of www.rakuten.com (attached hereto as Ex. O).

109. The current version of the www.rakuten.com website indicates that Ebates Performance Marketing operates www.rakuten.com by displaying Ebates Performance Marketing at the footer of the website. [24]

110. The Rakuten website and mobile applications display service marks owned by Rakuten, Inc., such as the pending service marks identified by serial numbers 88174978 and 88174970, and the issued service mark identified by serial number 77981939.[25] Rakuten, Inc. applied for the service mark identified by serial number 88174978 for a variety of goods and services, including "Downloadable software for managing online purchases, price monitoring, price change alerts, refund request assistance and related e-commerce transactions."[26] Rakuten, Inc. applied for the service mark identified by serial number 88174970 for a variety of goods and services, including (1) "Downloadable software for managing online purchases, price monitoring, price change alerts, refund request assistance and related e-commerce transactions"; (2) "Computer application software for mobile phones, tablets, and handheld computers, namely, ecommerce software to allow users to perform electronic business transactions relating to e-commerce, mobile-commerce and online shopping via a global computer network"; (3) "Computer software for e-commerce, mobile-commerce, and online shopping, namely, software for chatting and messaging relating to e-commerce, mobile-commerce, and online shopping; Computer software for e-commerce, mobile-commerce, and online shopping, namely, virtual keyboards, character art, and user interfaces for assisting with shopping transactions"; and (4) " Providing a website featuring non-downloadable software for managing online purchases, price monitoring,

[24] http://www.rakuten.com (attached hereto as Ex. P).
[25] http://www.rakuten.com (attached hereto as Ex. P).
[26] Screenshot from the Trademark Electronic Search System for serial number 88174978 (attached hereto as Ex. Q).

price change alerts, and refund request assistance and other e-commerce transactions."[27] Rakuten, Inc. applied for the service mark identified by serial number 77981939 for a variety of goods and services, including "IC 035. US 100 101 102. G & S: Retail department store services; [Retail convenience store services; Retail on-line department store services;] Retail on-line convenience store services; Computerized on-line ordering featuring general merchandise and general consumer goods; [Providing an on-line commercial information directory; Providing a searchable database in the field of business information available via a global computer network; Database management services;] Dissemination of advertising for others via an on-line electronic communications network; Providing advertising space on the Internet, and providing information and consultancy thereon." [28]

111. Rakuten, Inc. owns the domain for the Japanese Rakuten website (www.rakuten.jp).[29]

112. Rakuten, Inc. operates the Japanese Rakuten website.

113. The current version of the www.rakuten.jp website indicates that Rakuten, Inc. operates www.rakuten.jp by displaying Rakuten Group, Inc. at the footer of the Japanese Rakuten website.

114. The Japanese Rakuten website encourages users to access and use the US Rakuten website at least through links to the www.rakuten.com website.

[27] Screenshot from the Trademark Electronic Search System for serial number 88174970 (attached hereto as Ex. R).
[28] Screenshot from the Trademark Electronic Search System for serial number 77981939 (attached hereto as Ex. S).
[29] https://www.whois.com/whois/rakuten.jp (attached hereto as Ex. T).

115. Rakuten, Inc. created a Rakuten Institute of Technology ("RIT"), with multiple locations around the world, to perform research and develop technology.[30] The Rakuten Institute of Technology is the dedicated R&D organization of Rakuten, Inc.[31]

116. RIT's facilities are strategic R&D organizations that employ over 150 research personnel.[32]

117. According to Rakuten, "RIT researchers work collaboratively with engineers from more than 70 Rakuten services, including over 2,900 engineers in the Rakuten parent company alone, to form a unique structural approach to R&D."[33]

118. On information and belief, RIT researchers develop technology for the Rakuten website (www.rakuten.com) and Rakuten applications available on iOS and Android devices.

119. As one example, on information and belief, Rakuten advertises job postings for the RIT, including for a Senior Software Engineer position.[34] A Senior Software Engineer's role includes "assisting machine learning efforts by optimizing novel ML algorithms into production-ready code, developing new tools to accelerate model-building efforts, educating fellow members on best practices in software design, and maintaining world-class on prem and in cloud compute clusters."[35] Additional key responsibilities of a Senior Software Engineer include: 1. Optimizing novel ML algorithms for speed, throughput, resiliency, and cost; 2. Maintaining and enhancing

[30] Rakuten 2019 Corporate Report page 26 (attached hereto as Ex. M).
[31] https://rit.rakuten.co.jp/ (attached hereto as Ex. U).
[32] Rakuten 2019 Corporate Report page 26 (attached hereto as Ex. M).
[33] Rakuten 2019 Corporate Report page 26 (attached hereto as Ex. M).
[34] https://rakuten.wd1.myworkdayjobs.com/en-US/RakutenRewards/job/Boston-Massachusetts/Sr-Software-Engineer---Machine-Learning-Acceleration--Kubernetes-_1003542 (attached hereto as Ex. V).
[35] https://rakuten.wd1.myworkdayjobs.com/en-US/RakutenRewards/job/Boston-Massachusetts/Sr-Software-Engineer---Machine-Learning-Acceleration--Kubernetes-_1003542 (attached hereto as Ex. V).

large research clusters; 3. Writing new tools to accelerate machine learning efforts; 4. Designing new ETL pipelines to improve on premise server utilization; 5. Designing cloud strategies to speed up training/classification efforts with the least cost; and 6. Acting as a SME for software practices, containerization, networking, data management, and CI/CD.[36] On information and belief, Rakuten's technical employees at the RIT have relevant information related to the design, development, and operation of the accused Rakuten website and mobile applications.

120. RIT's goal is to use technology to enhance the usability of Rakuten's various services across e-commerce, fintech, mobile communications and digital content.[37] Particular priority is given to AI-related fields, such as machine learning and advanced deep learning.[38]

121. In the United States, RIT in Boston specializes primarily in machine learning, deep learning, and AI.[39] A particular focus is collaboration with teams utilizing the big data resources of the Rakuten Group in the rapidly advancing field of AI.[40]

122. RIT in San Mateo functions as a hub for research projects liking other RIT facilities and Rakuten business operations in the United States.[41] Its research focuses on data science, data mining, and NLP [Natural Language Processing], as well as machine learning and deep learning application in creative economy spaces.[42]

123. On information and belief, RIT researchers work to add new features, and improve upon existing features, on the Rakuten website (www.rakuten.com) and Rakuten applications available on iOS and Android devices.

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[36] *Id.*
[37] Rakuten 2019 Corporate Report page 26 (attached hereto as Ex. M).
[38] Rakuten 2019 Corporate Report page 26 (attached hereto as Ex. M).
[39] Rakuten 2019 Corporate Report page 26 (attached hereto as Ex. M).
[40] Rakuten 2019 Corporate Report page 26 (attached hereto as Ex. M).
[41] Rakuten 2019 Corporate Report page 26 (attached hereto as Ex. M).
[42] Rakuten 2019 Corporate Report page 26 (attached hereto as Ex. M).

124. RIT researchers' work on AI and deep learning focuses on the development of technologies to optimize various services based on highly automated analyses of the vast text and multimedia data resources of the Rakuten Group.[43] This work leads to the development of various platforms for searching, recommendations, advertising, and language processing with potential for applications in [Rakuten] Group businesses.[44]

3. Defendants' Knowledge Of The Patents-In-Suit And Infringement

125. For almost six years, IBM has tried to negotiate a license with Rakuten.

126. In July 2015, IBM contacted Rakuten, Inc. about a potential license agreement. IBM asked to meet with Rakuten, Inc. in order to negotiate a resolution to Rakuten, Inc.'s and its subsidiaries' infringement of several patents, including the '849 patent.

127. Rakuten, Inc. initially refused to meet with IBM due to purported scheduling conflicts.

128. In August and September 2015, Rakuten, Inc. claimed that its subsidiaries' infringement was independent of Rakuten, Inc., and that Rakuten, Inc. would not be able to determine whether or not its subsidiaries infringe IBM's patents. Rakuten, Inc. also asked that IBM contact its subsidiaries' legal departments individually.

129. Over the next two years, the parties discussed IBM's patent portfolio, but Rakuten refused to engage in in-person licensing discussions.

130. In July 2017, IBM was finally given the opportunity to meet with Rakuten representatives. IBM presented detailed evidence of Rakuten's continued patent infringement, including of the '849 patent. The parties continued to exchange correspondence over the next two

[43] Rakuten 2019 Corporate Report page 27 (attached hereto as Ex. M).
[44] Rakuten 2019 Corporate Report page 27 (attached hereto as Ex. M).

years. IBM repeatedly asked Rakuten, Inc. to engage in licensing discussions and to take a license to its patents. Rakuten, Inc. repeatedly refused.

131. In November 2017, Rakuten, Inc. sent a purported reply to IBM's presentation at the July 2017 meeting between the parties. Rakuten, Inc.'s reply claimed that IBM's patents were either invalid or that Rakuten, Inc. and its subsidiaries did not infringe.

132. Although Rakuten, Inc. had initially claimed that its subsidiaries' infringement was independent of Rakuten, Inc. and had taken the position that the subsidiaries' infringement was unrelated to the parent corporation, Rakuten, Inc. sent the November 2017 reply to IBM on behalf of its subsidiaries claiming that Rakuten believed IBM's patents were either invalid or that Rakuten, Inc. and its subsidiaries did not infringe.

133. In December 2018, IBM sent a letter to Rakuten USA, Inc., a subsidiary of Rakuten, Inc., informing Rakuten USA, Inc. directly of Rakuten's infringement and of Rakuten, Inc.'s dilatory tactics. IBM explained that such tactics may lead to enhanced damages under United States law.

134. In 2019, Rakuten told IBM that it had hired outside legal counsel and would no longer talk to IBM directly. That decision made it nearly impossible for IBM to attempt to resolve this matter through business negotiations. IBM urged Rakuten to reconsider. Rakuten refused.

135. For example, in February 2019, an attorney at a Japanese law firm contacted IBM via letter requesting that all future correspondence relating to Rakuten, Inc.'s and its subsidiaries' infringement be directed to the Japanese law firm. The letter referenced the correspondence IBM had sent to Rakuten USA, Inc. and requested that IBM not contact Rakuten, Inc. or any other Rakuten entities, departments, executives, or employees, but to instead contact the Japanese law firm with all correspondence related to Rakuten's infringement of IBM's patents. The letter

represented that the Japanese law firm was authorized to speak for Rakuten on Rakuten's infringement of IBM's patents. Although Rakuten, Inc. previously claimed that its subsidiaries' infringement was unrelated to the parent corporation, Rakuten, Inc.'s Japanese counsel requested that IBM direct all correspondence to the Japanese law firm, at a minimum implying that Rakuten, Inc. authorized its outside counsel to accept and send correspondence for all Rakuten entities.

136. On March 12, 2019, IBM sent letters to the Japanese law firm and to Rakuten USA, Inc. informing them that IBM had recently won an $82.5 million jury verdict against Groupon for willfully infringing some of the same patents that Rakuten was infringing. IBM noted that Rakuten's excuses for not licensing IBM's patents had been rejected in court. IBM also confirmed its understanding that the Japanese law firm was apparently authorized to speak for both Rakuten, Inc. and its subsidiaries, including Rakuten USA, Inc. IBM again requested that Rakuten engage in good-faith negotiations to resolve its continued infringement. Rakuten refused.

137. In July 2019, IBM notified Rakuten of additional patents that Rakuten was infringing, including the '346 patent and the '443 patent. IBM told Rakuten it was ready to meet with Rakuten regarding this additional infringement. Rakuten refused. Rather than address its infringement of IBM's intellectual property, Rakuten attempted to strong-arm IBM by threatening existing relationships between the companies. Rakuten said it would blacklist IBM from future business opportunities if IBM did not drop the issue.

138. In August 2019, the Japanese law firm again sent a letter to IBM stating that it represented Rakuten for all communications related to IBM's claims of infringement by Rakuten, and requesting that IBM not contact any Rakuten personnel.

139. In December 2019, IBM sent another letter to Rakuten USA, Inc. confirming its understanding that the Japanese law firm represented both Rakuten, Inc. and its subsidiaries,

including Rakuten USA, Inc., and notifying Rakuten that it infringed additional patents. The Japanese law firm responded to IBM's letter on behalf of the Rakuten entities and requested that IBM also include Rakuten's U.S. outside counsel on all communications.

140. While Rakuten, Inc. had repeatedly claimed that its subsidiaries' infringement were not issues related to Rakuten, Inc., Rakuten had now requested that IBM contact only Rakuten's Japanese outside counsel and U.S. outside counsel on all communications related to any Rakuten entity.

141. In January 2020, IBM sent a letter to Rakuten's U.S. outside counsel in view of Rakuten's representations that Rakuten's U.S. outside counsel was authorized to represent Rakuten, Inc. and its subsidiaries in connection with IBM's infringement claims. IBM requested that Rakuten's U.S. outside counsel confirm that he was representing Rakuten, Inc. and its subsidiaries in connection with IBM's claims. IBM included Rakuten's Japanese outside counsel on the communication.

142. In April 2020, Rakuten's U.S. outside counsel responded to IBM's January 2020 letter. Rakuten's U.S. outside counsel, responding on behalf of Rakuten, Inc. and its subsidiaries, asserted that Rakuten did not believe it infringed any IBM patents.

143. In July 2020, IBM notified Rakuten of four additional patents that Rakuten infringed and again offered to negotiate a license with Rakuten. Again, Rakuten provided meritless excuses for its continued infringement and again refused to meet with IBM in order to discuss the issues.

144. On March 2, 2021, IBM notified Rakuten, through its U.S. outside counsel, that Rakuten was infringing four additional patents, including the '676 patent, the '414 patent, and the '234 patent. IBM asked Rakuten to propose a time when representatives from both parties could

meet and have licensing discussions. Rakuten's U.S. outside counsel responded with additional meritless arguments and did not address IBM's request to resolve Rakuten's long-standing infringement.

145. Since 2015, IBM has repeatedly attempted to engage with Rakuten to find a business solution to resolve this dispute. During this process, Rakuten continuously refused to engage in any meaningful discussions about reaching a license which would end Rakuten's infringement of IBM's patents. Instead, Rakuten offered excuses and delay, while unlawfully reaping the benefits of IBM's innovations. IBM is left with no other option but to bring a lawsuit for patent infringement.

COUNT ONE
INFRINGEMENT OF THE '849 PATENT

146. IBM incorporates by reference paragraphs 1-145.

147. IBM is the owner of all right, title and interest in the '849 patent. The '849 patent was duly and properly issued by the USPTO on July 4, 2006. The '849 patent was duly assigned to IBM. A copy of the '849 patent is attached hereto as Exhibit A.

148. In violation of 35 U.S.C. § 271(a), Ebates Performance Marketing and Ebates Inc. have directly infringed one or more of the claims of the '849 patent by having made, designed, offered for sale, sold, provided, used, maintained, and/or supported its websites (including www.rakuten.com) and its mobile applications (including the Rakuten applications for mobile devices running on, for example, the Apple iOS and Google Android operating systems). Alternatively, Ebates Performance Marketing and Ebates Inc. have contributed to the infringement of one or more of the claims of the '849 patent in violation of 35 U.S.C. § 271(c) by selling, offering to sell, and/or supplying components, materials, or apparatuses for use in practicing the patented methods of the '849 patent by end users and consumers, as described below.

Alternatively, Ebates Performance Marketing and Ebates Inc. have induced others, including end users and customers, to infringe one or more of the claims of the ’849 patent in violation of 35 U.S.C. § 271(b), as described below.

149. At least Ebates Performance Marketing’s infringement is continuing in view of its current role in owning and operating the Rakuten website and mobile applications, as explained below. In view of Ebates Inc.’s apparent past role in owning and operating the Rakuten website and mobile applications, Ebates Inc. has infringed the ’849 patent, at least in the past, for the same reasons explained below for Ebates Performance Marketing’s continuing infringement.

150. For example, Ebates Performance Marketing directly infringes at least claim 1 of the ’849 patent through www.rakuten.com and the Rakuten mobile applications, at least by:

a. presenting advertising obtained from a computer network (such as the Internet), the network including a multiplicity of user reception systems (such as the computers or mobile devices of Rakuten’s customers) at which respective users can request applications (such as Rakuten’s webpage), from the network, that include interactive services (such as cash back offers), the respective reception systems including a monitor (such as a computer monitor or mobile screen of a Rakuten customer’s computer or mobile device) at which at least the visual portion of the applications can be presented as one or more screens of display, the method comprising the steps of:

b. structuring applications (such as Rakuten’s webpage) so that they may be presented, through the network, at a first portion (such as the portion of the webpage in which the content for cash back offers is presented) of one or more screens of display; and

c. structuring advertising (such as cash back offers) in a manner compatible to that of the applications so that it may be presented, through the network, at a second portion (such

as the portion of the webpage in which the cash back offer is presented) of one or more screens of display concurrently with applications (such as Rakuten's webpage), wherein structuring the advertising includes configuring the advertising as objects (such as HTTP Responses containing png, gif, or jpeg files) that include advertising data and;

d. selectively storing (such as by setting a cache control parameter) advertising objects at a store (such as the browser cache) established at the reception system.

151. Alternatively, to the extent the "structuring" step is performed by a third party (in addition to and/or separate from Ebates Performance Marketing's performance), such as a browser or mobile operating system, that performance is attributable to Ebates Performance Marketing at least because Ebates Performance Marketing has an agency or contractual relationship with said third party, or Ebates Performance Marketing directs or controls the performance of said third party. For example, Ebates Performance Marketing directs or controls the performance of the "structuring" steps by browsers and mobile operating systems because it, for example, establishes the manner or timing of the performance by, for example, designing and generating the HTML template and computer code (such as JavaScript and JSON), which comprise www.rakuten.com and the Rakuten mobile applications. That HTML template and computer code contains instructions that direct the browser or mobile operating system to structure the Rakuten webpage or Rakuten mobile applications in a particular manner. For another example, Ebates Performance Marketing directs or controls the performance of the "structuring" steps by browsers and mobile operating systems because it profits from such performance by, for example, increasing use and user interactions by designing its website in a user-friendly manner. Ebates Performance Marketing has the right to stop or limit infringement by, for example, redesigning the HTML and

computer code of www.rakuten.com and the Rakuten mobile applications to function in a non-infringing manner.

152. Alternatively, to the extent that the "selectively storing" step is performed by a third party (in addition to and/or separate from Ebates Performance Marketing's performance), such as a browser or mobile operating system, that performance is attributable to Ebates Performance Marketing at least because Ebates Performance Marketing has an agency or contractual relationship with said third party, or Ebates Performance Marketing directs or controls the performance of said third party. For example, Ebates Performance Marketing directs or controls the performance of the "selectively storing" step by browsers and mobile operating systems because it, for example, conditions receipt of a benefit, such as reduced latency, on the performance of the claimed steps, and establishes the manner or timing of the performance by, for example, determining which image and other data is cached and for how long. For another example, Ebates Performance Marketing directs or controls the performance of the "selectively storing" step by browsers and mobile operating systems because it profits from such performance by, for example, increasing use and user interactions through reduced latency. Ebates Performance Marketing has the right to stop or limit infringement by, for example, determining that image and other data should not be cached.

153. Alternatively, to the extent that the "selectively storing" step is performed by a third party (in addition to and/or separate from Ebates Performance Marketing's performance), such as a Content Delivery Network ("CDN") or other server, that performance is attributable to Ebates Performance Marketing at least because Ebates Performance Marketing has an agency or contractual relationship with said third party, or Ebates Performance Marketing directs or controls the performance of said third party. For example, Ebates Performance Marketing directs or

controls the performance of the "selectively storing" step by CDNs because it, for example, conditions receipt of a benefit, such as payment for services, on the performance of the claimed steps, and establishes the manner or timing of the performance by, for example, determining which image and other data is cached and for how long. For another example, Ebates Performance Marketing directs or controls the performance of the "selectively storing" step by browsers and mobile operating systems because it profits from the performance by, for example, increasing use and user interactions through reduced latency. Ebates Performance Marketing has the right to stop or limit infringement by, for example, determining that image and other data should not be cached.

154. Ebates Performance Marketing and Ebates Inc. have had knowledge of the '849 patent and their direct and indirect infringement since at least July 30, 2015 through IBM's numerous communications with Rakuten, Inc. and its subsidiaries, as well as Rakuten's Japanese and U.S. outside counsel authorized to receive and respond to communications regarding IBM's claims on behalf of Rakuten, Inc. and its subsidiaries, outlined in the section titled "Defendants' Knowledge Of The Patents-In-Suit And Infringement" above.

155. Ebates Performance Marketing also indirectly infringes one or more claims of the '849 patent through its websites (including www.rakuten.com) and the Rakuten mobile applications (including the Rakuten applications for mobile devices running on, for example, the Apple iOS and Google Android operating systems). On information and belief, in certain circumstances, client devices and software (e.g., devices and software used by end users and customers of Rakuten's website and the associated mobile applications) directly infringe the '849 patent through the use of the website and mobile applications. In particular, to the extent Ebates Performance Marketing does not perform the method steps, in certain circumstances, client devices and software (e.g., devices and software used by end users, customers, and potential customers of

Rakuten's website and the associate mobile applications) perform at least the method of presenting advertising recited by claim 1 of the '849 patent.

156. On information and belief, despite knowledge of the infringement of the '849 patent, Ebates Performance Marketing intended and continues to intend to contribute to patent infringement by third parties by selling, offering to sell, and/or supplying components, materials, or apparatuses for use in practicing the patented methods of the '849 patent by end users and consumers, as described in this section.

157. For example, Ebates Performance Marketing provides computer code (such as HTML, JavaScript, JSON, and image files) underlying the Rakuten website and mobile applications that is sent to customers and end users for use in infringing the '849 patent, and such computer code does not have substantial non-infringing uses. Such computer code is especially made and/or especially adapted for use in infringing the '849 patent and is not a staple article or commodity of commerce suitable for substantial non-infringing use. The only substantial use of such computer code is for the claimed subject matter involving presenting applications along with advertising as described in the '849 patent.

158. Further, as a part of providing said computer code, Ebates Performance Marketing enters into binding contracts with end users and customers to use Rakuten's website and mobile applications, including in an infringing manner, including by binding the users to a terms of service governing access to and use of the accused website and mobile applications.

159. Ebates Performance Marketing receives valuable consideration from customers and end users located in this judicial district, including information provided by customers and end users, information automatically collected from customers and end users, and monetary consideration from customers and end users who purchase lodging and other travel services

through Rakuten's website and mobile applications. When customers and end users in this judicial district use the accused website and/or mobile applications, Ebates Performance Marketing collects information about the customers and end users, their devices, and their interaction with the accused website and the associated mobile applications. Ebates Performance Marketing works with service providers and advertising networks to track and manage cookie information and activities of customers and end users across different websites and devices. Third parties use cookie information collected by Ebates Performance Marketing to deliver advertisements to end users and customers based on their use of the accused website and mobile applications. Ebates Performance Marketing's business is funded through advertising. The applications and website are especially made and/or especially adapted for use in infringing the Patents-In-Suit, at least as detailed above, and are not a staple article or commodity of commerce suitable for substantial non-infringing uses because, among other things, the components sent to users are uniquely designed only to access the infringing aspects of Rakuten's website and mobile applications.

160. On information and belief, despite its knowledge of the infringement of the '849 patent, Ebates Performance Marketing has intended and continues to intend to induce patent infringement by third parties, including at least the direct infringement by end users and customers, as described in this section. Ebates Performance Marketing has and continues to encourage and instruct customers and end users to use Rakuten's website and the associated mobile applications in a manner that infringes the '849 patent by advertising the website and mobile applications, providing customer support, and designing its 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 '849 patent.

161. On information and belief, to the extent Ebates Performance Marketing was not aware that it was encouraging its customers and end users to infringe the '849 patent, its lack of

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

162. Additionally, Rakuten, Inc. has induced others, including Ebates Performance Marketing, Ebates Inc., and end users and customers, to infringe one or more of the claims of the '849 patent in violation of 35 U.S.C. § 271(b), as described below.

163. On information and belief, despite its knowledge of the infringement of the '849 patent, Rakuten, Inc. has intended and continues to intend to actively induce patent infringement by third parties, including at least the direct infringement by Ebates Performance Marketing, Ebates Inc., and end users and customers, as described above. Rakuten, Inc. has and continues to encourage and instruct customers and end users to use the Rakuten website and the Rakuten mobile applications in a manner that infringes the '849 patent by advertising the website and mobile applications, providing customer support, and designing its 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 '849 patent. For example, Rakuten, Inc. operates the www.rakuten.jp website, which actively induces users to go to and use the infringing www.rakuten.com website.

164. Rakuten, Inc. exercises close control over its subsidiaries, including Ebates Performance Marketing and Ebates Inc., including over their infringing activities. For example, Rakuten, Inc. has established Rakuten Group Rules and Regulations, concerning philosophy, group governance, corporate management, risk management, and compliance of the subsidiaries' operations. Important business operations of Rakuten, Inc.'s subsidiaries are conducted in accordance with the "Rakuten Group Table of Duties and Authorities" and the "Rakuten Group Guidelines." The control of Rakuten subsidiaries includes overlapping executives and directors among Rakuten, Inc. and Rakuten entities in the U.S.

165. Rakuten subsidiaries also comply with a system of decision-making by Rakuten, Inc., and also report to Rakuten, Inc.'s Internal Audit Department, an organization under the direct control of the President and Representative Director of Rakuten, Inc. This system ensures cooperation with the internal audit departments of subsidiaries and ensure the appropriateness of the subsidiaries' operations by conducting internal audits throughout the Rakuten Group.

166. Rakuten, Inc. has also established the Rakuten Group Ethics Charter, which includes policies and guidelines covering all areas of its subsidiaries operations including legal compliance, labor practices, information security, quality management, and sustainability.

167. Rakuten, Inc. has also appointed a Chief Compliance Officer to oversee Rakuten, Inc.'s subsidiaries under the supervision of the Chief Operating Officer, and a Company Compliance Officer for each Rakuten subsidiary. The Company Compliance Officer is responsible for the overall management of the Group. The Company Compliance Officer works with the Function Chief Compliance Officer to promote compliance programs and actionable monitoring, and is responsible for strengthening the Group-wide compliance system.

168. Rakuten, Inc. has also established committees for quality improvement and quality assurance with the participation of Rakuten, Inc. and Rakuten, Inc.'s subsidiaries. The Quality Improvement Committee monitors quality and shares best practices to promote the implementation of measures and ensure their penetration into each service. The Quality Assurance Committee discusses the establishment, revision, and abolition of standards and guidelines, as well as the evaluation and improvement of measures across Rakuten, Inc. and its subsidiaries.

169. On information and belief, Rakuten, Inc. trains technical employees who are responsible for the design, operation, and development of the Rakuten website and mobile applications, including technical employees at the RIT. As described above, Rakuten posts job

listings for technical positions related to developing the Rakuten website and mobile applications, including a position for Senior Software Engineer at the RIT whose responsibilities include "assisting machine learning efforts by optimizing novel ML algorithms into production-ready code, developing new tools to accelerate model-building efforts, educating fellow members on best practices in software design, and maintaining world-class on prem and in cloud compute clusters."[45] Researchers and engineers at Rakuten, Inc. and the RIT, such as Senior Software Engineers, develop aspects of the infringing website and mobile applications.

170. Rakuten, Inc. also owns and maintains the www.rakuten.com domain of the infringing website. On information and belief, Rakuten, Inc. directs its subsidiaries (including at least Ebates Performance Marketing and Ebates Inc.) to design its website and operate its website to offer infringing products and services through the www.rakuten.com website that it owns. On information and belief, Rakuten, Inc. provides financial and technical support to support those efforts.

171. Rakuten, Inc. manages IDs and payment functions to provide its users with the ability to utilize the same accounts/IDs with various services in the Rakuten Ecosystem, including on information and belief, the accused website and mobile applications.

172. Rakuten, Inc.'s active inducement, as described in this section, has led to infringement of the '849 patent by at least Ebates Performance Marketing, Ebates Inc., and end users and customers.

[45] https://rakuten.wd1.myworkdayjobs.com/en-US/RakutenRewards/job/Boston-Massachusetts/Sr-Software-Engineer---Machine-Learning-Acceleration--Kubernetes-_1003542 (attached hereto as Ex. V).

173. On information and belief, to the extent Rakuten, Inc., was not aware that it was encouraging its customers and end users to infringe the ’849 patent, its lack of knowledge was based on being willfully blind to the possibility that its acts would cause infringement.

174. IBM has been damaged by the infringement of its ’849 patent by Rakuten and will continue to be damaged by such infringement. IBM is entitled to recover from Rakuten the damages sustained by IBM as a result of Rakuten’s wrongful acts.

175. The continued infringement by Rakuten of the ’849 patent is 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.

176. 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 Rakuten is enjoined therefrom by this Court.

COUNT TWO
INFRINGEMENT OF THE ’346 PATENT

177. IBM incorporates by reference paragraphs 1-176.

178. IBM is the owner of all right, title and interest in the ’346 patent. The ’346 patent was duly and properly issued by the USPTO on December 8, 2009. The ’346 patent was duly assigned to IBM. A copy of the ’346 patent is attached hereto as Exhibit B.

179. In violation of 35 U.S.C. § 271(a), Ebates Performance Marketing and Ebates Inc. have directly infringed one or more of the claims of the ’346 patent by having made, designed, offered for sale, sold, provided, used, maintained, and/or supported its websites (including www.rakuten.com) and its mobile applications (including the Rakuten applications for mobile devices running on, for example, the Apple iOS and Google Android operating systems). Alternatively, Ebates Performance Marketing and Ebates Inc. have contributed to the infringement

of one or more of the claims of the ’346 patent in violation of 35 U.S.C. § 271(c) by selling, offering to sell, and/or supplying components, materials, or apparatuses for use in practicing the patented methods of the ’346 patent by end users and consumers, as described below. Alternatively, Ebates Performance Marketing and Ebates Inc. have induced others, including end users and customers, to infringe one or more of the claims of the ’346 patent in violation of 35 U.S.C. § 271(b), as described below.

180. At least Ebates Performance Marketing’s infringement is continuing in view of its current role in owning and operating the Rakuten website and mobile applications, as explained below. In view of Ebates Inc.’s apparent past role in owning and operating the Rakuten website and mobile applications, Ebates Inc. has infringed the ’346 patent, at least in the past, for the same reasons explained below for Ebates Performance Marketing’s continuing infringement.

181. For example, Ebates Performance Marketing directly infringes at least claim 1 of the ’346 patent through www.rakuten.com and the Rakuten mobile applications at least by:

a. managing user authentication (such as verifying the identity of a Rakuten user) within a distributed data processing system (such as a computer network), wherein a first system (such as Google and its network) and a second system (such as Rakuten and its network) interact within a federated computing environment (such as a computer network; for example, the Internet, including Google and Rakuten) and support single-sign-on operations (“Sign in” operations) in order to provide access to protected resources (such as “Cash Back”), at least one of the first system and the second system comprising a processor, the method comprising;

b. triggering a single-sign-on operation (such as launching an operation to “Sign up” using Google) on behalf of the user in order to obtain access to a protected resource that is hosted by the second system, wherein the second system requires a user account for the user to

complete the single-sign-on operation (such as requiring the user to have a Rakuten account) prior to providing access to the protected resource;

c. receiving from the first system at the second system an identifier associated with the user (such as an email address);

d. creating a user account (such as a Rakuten account) for the user at the second system based at least in part on the received identifier associated with the user after triggering the single-sign-on operation but before generating at the second system a response for accessing the protected resource (such as "Cash Back"), wherein the created user account supports single-sign-on operations (such as future Rakuten single-sign-on operations) between the first system and the second system on behalf of the user.

182. Alternatively, to the extent the "triggering" step is performed by a third party (in addition to and/or separate from Ebates Performance Marketing's performance), such as a user, browser, or mobile operating system, that performance is attributable to Ebates Performance Marketing at least because Ebates Performance Marketing has an agency or contractual relationship with said third party, or Ebates Performance Marketing controls or directs the performance of said third party. For example, Ebates Performance Marketing controls or directs the performance of the "triggering" step by users, browsers, and mobile operating systems because it, for example, conditions receipt of a benefit, such as access to certain applications on Rakuten's website and mobile applications, on the performance of the claimed steps, and establishes the manner or timing of the performance by, for example, triggering the single-sign-on operation using its underlying computer code. For another example, Ebates Performance Marketing controls or directs the performance of the "triggering" step by users, browsers, and mobile operating systems because it profits from the performance by, for example, increasing the number of signed-in users

accessing Rakuten's website and mobile applications. Ebates Performance Marketing has the right to stop or limit infringement, by, for example, not enabling the use of single-sign-on operations.

183. Ebates Performance Marketing and Ebates Inc. have had knowledge of the '346 patent and their direct and indirect infringement since at least July 31, 2019 through IBM's numerous communications with Rakuten, Inc. and its subsidiaries, as well as Rakuten's Japanese and U.S. outside counsel authorized to receive and respond to communications regarding IBM's claims on behalf of Rakuten, Inc. and its subsidiaries, outlined in the section titled "Defendants' Knowledge Of The Patents-In-Suit And Infringement" above.

184. Ebates Performance Marketing also indirectly infringes one or more claims of the '346 patent through its websites (including www.rakuten.com) and its mobile applications (including the Rakuten applications for mobile devices running on, for example, the Apple iOS and Google Android operating systems). On information and belief, in certain circumstances, client devices and software (e.g., devices and software used by end users and customers of Rakuten's website and the associated mobile applications) directly infringe the '346 patent through the use of the website and mobile applications. In particular, to the extent Ebates Performance Marketing does not perform the method steps, in certain circumstances, client devices and software (e.g., devices and software used by end users, customers, and potential customers of Rakuten's website and the associate mobile applications) perform at least the method for managing user authentication within a distributed data processing system recited by claim 1 of the '346 patent.

185. On information and belief, despite knowledge of the infringement of the '346 patent, Ebates Performance Marketing has intended and continues to intend to contribute to patent infringement by third parties by selling, offering to sell, and/or supplying components, materials,

or apparatuses for use in practicing the patented methods of the ’346 patent by end users and consumers, as described in this section.

186. For example, Ebates Performance Marketing provides computer code (such as HTML, JavaScript, and image files) underlying the Rakuten website and mobile applications to customers and end users for use in infringing the ’346 patent, and such computer code does not have substantial non-infringing uses. Such computer code is especially made and/or especially adapted for use in infringing the ’346 patent and is not a staple article or commodity of commerce suitable for substantial non-infringing use. The only substantial use of Rakuten’s computer code responses is for the claimed subject matter involving formatting and serving web content as described in the ’346 patent.

187. Further, as a part of providing said computer code, Ebates Performance Marketing enters into binding contracts with end users and customers to use Rakuten’s website and mobile applications, including in an infringing manner, including by binding the users to a terms of service governing access to and use of the accused website and mobile applications.

188. On information and belief, Ebates Performance Marketing receives valuable consideration from customers and end users located in this judicial district, including information provided by customers and end users, information automatically collected from customers and end users, and monetary consideration from customers and end users who purchase products through Rakuten’s website and mobile applications. When customers and end users in this judicial district use the accused website and mobile applications, Ebates Performance Marketing collects a fee for sending a customer to a third party store via the accused website or mobile applications. The website and mobile applications are especially made and/or especially adapted for use in infringing the Patents-In-Suit, at least as detailed above, and are not a staple article or commodity of

commerce suitable for substantial non-infringing uses because, among other things, the components sent to users are uniquely designed only to access the infringing aspects of Rakuten's website and mobile applications.

189. On information and belief, despite its knowledge of the infringement of the '346 patent, Ebates Performance Marketing has intended and continues to intend to induce patent infringement by third parties, including at least the direct infringement by end users and customers, as described in this section. Ebates Performance Marketing has and continues to encourage and instruct customers and end users to use Rakuten's website and the associated mobile applications in a manner that infringes the '346 patent by advertising the website and mobile applications, providing customer support, and designing its 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 '346 patent.

190. On information and belief, to the extent Ebates Performance Marketing was not aware that it was encouraging its customers and end users to infringe the '346 patent, its lack of knowledge was based on being willfully blind to the possibility that its acts would cause infringement.

191. Additionally, Rakuten, Inc. has induced others, including Ebates Performance Marketing, Ebates Inc., and end users and customers, to infringe one or more of the claims of the '346 patent in violation of 35 U.S.C. § 271(b), as described below.

192. On information and belief, despite its knowledge of the infringement of the '346 patent, Rakuten, Inc. has intended and continues to intend to actively induce patent infringement by third parties, including at least the direct infringement by Ebates Performance Marketing, Ebates Inc., and end users and customers, as described above. Rakuten, Inc. has and continues to encourage and instruct customers and end users to use the Rakuten website and the Rakuten mobile

applications in a manner that infringes the ’346 patent by advertising the website and mobile applications, providing customer support, and designing its 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 ’346 patent. For example, Rakuten, Inc. operates the www.rakuten.jp website, which actively induces users to go to and use the infringing www.rakuten.com website.

193. Rakuten, Inc. exercises close control over its subsidiaries, including Ebates Performance Marketing and Ebates Inc., including over their infringing activities. For example, Rakuten, Inc. has established Rakuten Group Rules and Regulations, concerning philosophy, group governance, corporate management, risk management, and compliance of the subsidiaries’ operations. Important business operations of Rakuten, Inc.’s subsidiaries are conducted in accordance with the “Rakuten Group Table of Duties and Authorities” and the “Rakuten Group Guidelines.” The control of Rakuten subsidiaries includes overlapping executives and directors among Rakuten, Inc. and Rakuten entities in the U.S.

194. Rakuten subsidiaries also comply with a system of decision-making by Rakuten, Inc., and also report to Rakuten, Inc.’s Internal Audit Department, an organization under the direct control of the President and Representative Director of Rakuten, Inc. This system ensures cooperation with the internal audit departments of subsidiaries and ensure the appropriateness of the subsidiaries’ operations by conducting internal audits throughout the Rakuten Group.

195. Rakuten, Inc. has also established the Rakuten Group Ethics Charter, which includes policies and guidelines covering all areas of its subsidiaries operations including legal compliance, labor practices, information security, quality management, and sustainability.

196. Rakuten, Inc. has also appointed a Chief Compliance Officer to oversee Rakuten, Inc.’s subsidiaries under the supervision of the Chief Operating Officer, and a Company

Compliance Officer for each Rakuten subsidiary. The Company Compliance Officer is responsible for the overall management of the Group. The Company Compliance Officer works with the Function Chief Compliance Officer to promote compliance programs and actionable monitoring, and is responsible for strengthening the Group-wide compliance system.

197. Rakuten, Inc. has also established committees for quality improvement and quality assurance with the participation of Rakuten, Inc. and Rakuten, Inc.'s subsidiaries. The Quality Improvement Committee monitors quality and shares best practices to promote the implementation of measures and ensure their penetration into each service. The Quality Assurance Committee discusses the establishment, revision, and abolition of standards and guidelines, as well as the evaluation and improvement of measures across Rakuten, Inc. and its subsidiaries.

198. On information and belief, Rakuten, Inc. trains technical employees who are responsible for the design, operation, and development of the Rakuten website and mobile applications, including technical employees at the RIT. As described above, Rakuten posts job listings for technical positions related to developing the Rakuten website and mobile applications, including a position for Senior Software Engineer at the RIT whose responsibilities include "assisting machine learning efforts by optimizing novel ML algorithms into production-ready code, developing new tools to accelerate model-building efforts, educating fellow members on best practices in software design, and maintaining world-class on prem and in cloud compute clusters."[46] Researchers and engineers at Rakuten, Inc. and the RIT, such as Senior Software Engineers, develop aspects of the infringing website and mobile applications.

[46] https://rakuten.wd1.myworkdayjobs.com/en-US/RakutenRewards/job/Boston-Massachusetts/Sr-Software-Engineer---Machine-Learning-Acceleration--Kubernetes-_1003542 (attached hereto as Ex. V).

199. Rakuten, Inc. also owns and maintains the www.rakuten.com domain of the infringing website. On information and belief, Rakuten, Inc. directs its subsidiaries (including at least Ebates Performance Marketing and Ebates Inc.) to design its website and operate its website to offer infringing products and services through the www.rakuten.com website that it owns. On information and belief, Rakuten, Inc. provides financial and technical support to support those efforts.

200. Rakuten, Inc. manages IDs and payment functions to provide its users with the ability to utilize the same accounts/IDs with various services in the Rakuten Ecosystem, including on information and belief, the accused website and mobile applications.

201. Rakuten, Inc.'s active inducement, as described in this section, has led to infringement of the '346 patent by at least Ebates Performance Marketing, Ebates Inc., and end users and customers.

202. On information and belief, to the extent Rakuten, Inc., was not aware that it was encouraging its customers and end users to infringe the '346 patent, its lack of knowledge was based on being willfully blind to the possibility that its acts would cause infringement.

203. IBM has been damaged by the infringement of its '346 patent by Rakuten and will continue to be damaged by such infringement. IBM is entitled to recover from Rakuten the damages sustained by IBM as a result of Rakuten's wrongful acts.

204. The continued infringement by Rakuten of the '346 patent is 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.

205. 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 Rakuten is enjoined therefrom by this Court.

COUNT THREE
INFRINGEMENT OF THE '676 PATENT

206. IBM incorporates by reference paragraphs 1-205.

207. IBM is the owner of all right, title and interest in the '676 patent. The '676 patent was duly and properly issued by the USPTO on August 31, 2004. The '676 patent was duly assigned to IBM. A copy of the '676 patent is attached hereto as Exhibit C.

208. In violation of 35 U.S.C. § 271(a), Ebates Performance Marketing and Ebates Inc. have directly infringed one or more of the claims of the '676 patent by having made, designed, offered for sale, sold, provided, used, maintained, and/or supported its websites (including www.rakuten.com) and its mobile applications (including the Rakuten applications for mobile devices running on, for example, the Apple iOS and Google Android operating systems). Alternatively, Ebates Performance Marketing and Ebates Inc. have contributed to the infringement of the claims of the '676 patent in violation of 35 U.S.C. § 271(c) by selling, offering to sell, and/or supplying components, materials or apparatuses for use in practicing the patented methods of the '676 patent by end users and consumers, as described in this section. Alternatively, Ebates Performance Marketing and Ebates Inc. have induced others, including end users and customers, to infringe one or more of the claims of the '676 patent in violation of 35 U.S.C. § 271(b), as described below.

209. At least Ebates Performance Marketing's infringement is continuing in view of its current role in owning and operating the Rakuten website and mobile applications, as explained below. In view of Ebates Inc.'s apparent past role in owning and operating the Rakuten website

and mobile applications, Ebates Inc. has infringed the '676 patent, at least in the past, for the same reasons explained below for Ebates Performance Marketing's continuing infringement.

210. For example, Ebates Performance Marketing directly infringes at least claim 14 of the '676 patent through www.rakuten.com and the Rakuten mobile applications, at least by:

a. receiving a resource response set of results (such as search result listings for categories of stores on www.rakuten.com) obtained in response to a current user query (such as a search for stores submitted by a user);

b. receiving a user context vector (such as a set of data associated with a specific user) associated with said current user query (such as the user's current search on Rakuten's website), said user context vector comprising data associating an interaction state with said user (such as log processes, cookies, location-identifying data, or other tracking data associated with a user) and including context that is a function of the user (such as data classifying the user, including likely preferences, characteristics, behavior, and attitudes);

c. applying an ordering and annotation function for mapping the user context vector with the resource response set (such as Rakuten's algorithm for ranking stores) to generate an annotated response set having one or more annotations (such as an ordered set of stores to be included in the search results, like "Today's Recommended Stores"); and,

d. controlling the presentation of the resource response set to the user according to said annotations (such as presenting search results, like "Today's Recommended Stores" on the Rakuten website), wherein the ordering and annotation function is executed interactively at the time of each user query (such as Ebates Performance Marketing executing the algorithm for ranking stores presented in search results, like "Today's Recommended Stores," whenever it receives a request from a user searching for stores).

211. Ebates Performance Marketing and Ebates Inc. have had knowledge of the '676 patent and their direct and indirect infringement since at least March 2, 2021 through IBM's numerous communications with Rakuten, Inc. and its subsidiaries, as well as Rakuten's Japanese and U.S. outside counsel authorized to receive and respond to communications regarding IBM's claims on behalf of Rakuten, Inc. and its subsidiaries, outlined in the section titled "Defendants' Knowledge Of The Patents-In-Suit And Infringement" above.

212. Ebates Performance Marketing also indirectly infringes one or more claims of the '676 patent through its websites (including www.rakuten.com) and its mobile applications (including the Rakuten applications for mobile devices running on, for example, the Apple iOS and Google Android operating systems). On information and belief, in certain circumstances, client devices and software (e.g., devices and software used by end users and customers of Rakuten's website and the associated mobile applications) directly infringe the '676 patent through the use of the website and mobile applications. In particular, to the extent Ebates Performance Marketing does not perform the method steps, in certain circumstances, client devices and software (e.g., devices and software used by end users, customers, and potential customers of Rakuten's website and the associate mobile applications) perform at least the method of annotating resource results recited by claim 14 of the '676 patent.

213. On information and belief, despite knowledge of the infringement of the '676 patent, Ebates Performance Marketing has intended and continues to intend to contribute to patent infringement by third parties by selling, offering to sell, and/or supplying components, materials, or apparatuses for use in practicing the patented methods of the '676 patent by end users and consumers, as described in this section.

214. For example, Ebates Performance Marketing provides computer code (such as HTML, JavaScript, and image files) underlying the Rakuten website and mobile applications to customers and end users for use in infringing the '676 patent, and such computer code does not have substantial non-infringing uses. Such computer code is especially made and/or especially adapted for use in infringing the '676 patent and is not a staple article or commodity of commerce suitable for substantial non-infringing use. The only substantial use of Rakuten's computer code responses is for the claimed subject matter involving annotating resource results obtained in a customer self-service system that performs resource search and selection as described in the '676 patent.

215. Further, as a part of providing said computer code, Ebates Performance Marketing enters into binding contracts with end users and customers to use Rakuten's website and mobile applications, including in an infringing manner, including by binding the users to a terms of service governing access to and use of the accused website and mobile applications.

216. On information and belief, Ebates Performance Marketing receives valuable consideration from customers and end users located in this judicial district, including information provided by customers and end users, information automatically collected from customers and end users, and monetary consideration from customers and end users who purchase products through Rakuten's website and mobile applications. When customers and end users in this judicial district use the accused website and mobile applications, Ebates Performance Marketing collects a fee for sending a customer to a third party store via the accused website or mobile applications. The website and mobile applications are especially made and/or especially adapted for use in infringing the Patents-In-Suit, at least as detailed above, and are not a staple article or commodity of commerce suitable for substantial non-infringing uses because, among other things, the

components sent to users are uniquely designed only to access the infringing aspects of Rakuten's website and mobile applications.

217. On information and belief, despite its knowledge of the infringement of the '676 patent, Ebates Performance Marketing has intended and continues to intend to induce patent infringement by third parties, including at least the direct infringement by end users and customers, as described in this section. Ebates Performance Marketing has and continues to encourage and instruct customers and end users to use Rakuten's website and the associated mobile applications in a manner that infringes the '676 patent by advertising the website and mobile applications, providing customer support, and designing its 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 '676 patent.

218. On information and belief, to the extent Ebates Performance Marketing was not aware that it was encouraging its customers and end users to infringe the '676 patent, its lack of knowledge was based on being willfully blind to the possibility that its acts would cause infringement.

219. Additionally, Rakuten, Inc. has induced others, including Ebates Performance Marketing, Ebates Inc., and end users and customers, to infringe one or more of the claims of the '676 patent in violation of 35 U.S.C. § 271(b), as described below.

220. On information and belief, despite its knowledge of the infringement of the '676 patent, Rakuten, Inc. has intended and continues to intend to actively induce patent infringement by third parties, including at least the direct infringement by Ebates Performance Marketing, Ebates Inc., and end users and customers, as described above. Rakuten, Inc. has and continues to encourage and instruct customers and end users to use the Rakuten website and the Rakuten mobile applications in a manner that infringes the '676 patent by advertising the website and mobile

applications, providing customer support, and designing its 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 '676 patent. For example, Rakuten, Inc. operates the www.rakuten.jp website, which actively induces users to go to and use the infringing www.rakuten.com website.

221. Rakuten, Inc. exercises close control over its subsidiaries, including Ebates Performance Marketing and Ebates Inc., including over their infringing activities. For example, Rakuten, Inc. has established Rakuten Group Rules and Regulations, concerning philosophy, group governance, corporate management, risk management, and compliance of the subsidiaries' operations. Important business operations of Rakuten, Inc.'s subsidiaries are conducted in accordance with the "Rakuten Group Table of Duties and Authorities" and the "Rakuten Group Guidelines." The control of Rakuten subsidiaries includes overlapping executives and directors among Rakuten, Inc. and Rakuten entities in the U.S.

222. Rakuten subsidiaries also comply with a system of decision-making by Rakuten, Inc., and also report to Rakuten, Inc.'s Internal Audit Department, an organization under the direct control of the President and Representative Director of Rakuten, Inc. This system ensures cooperation with the internal audit departments of subsidiaries and ensure the appropriateness of the subsidiaries' operations by conducting internal audits throughout the Rakuten Group.

223. Rakuten, Inc. has also established the Rakuten Group Ethics Charter, which includes policies and guidelines covering all areas of its subsidiaries operations including legal compliance, labor practices, information security, quality management, and sustainability.

224. Rakuten, Inc. has also appointed a Chief Compliance Officer to oversee Rakuten, Inc.'s subsidiaries under the supervision of the Chief Operating Officer, and a Company Compliance Officer for each Rakuten subsidiary. The Company Compliance Officer is

responsible for the overall management of the Group. The Company Compliance Officer works with the Function Chief Compliance Officer to promote compliance programs and actionable monitoring, and is responsible for strengthening the Group-wide compliance system.

225. Rakuten, Inc. has also established committees for quality improvement and quality assurance with the participation of Rakuten, Inc. and Rakuten, Inc.'s subsidiaries. The Quality Improvement Committee monitors quality and shares best practices to promote the implementation of measures and ensure their penetration into each service. The Quality Assurance Committee discusses the establishment, revision, and abolition of standards and guidelines, as well as the evaluation and improvement of measures across Rakuten, Inc. and its subsidiaries.

226. On information and belief, Rakuten, Inc. trains technical employees who are responsible for the design, operation, and development of the Rakuten website and mobile applications, including technical employees at the RIT. As described above, Rakuten posts job listings for technical positions related to developing the Rakuten website and mobile applications, including a position for Senior Software Engineer at the RIT whose responsibilities include "assisting machine learning efforts by optimizing novel ML algorithms into production-ready code, developing new tools to accelerate model-building efforts, educating fellow members on best practices in software design, and maintaining world-class on prem and in cloud compute clusters."[47] Researchers and engineers at Rakuten, Inc. and the RIT, such as Senior Software Engineers, develop aspects of the infringing website and mobile applications.

227. Rakuten, Inc. also owns and maintains the www.rakuten.com domain of the infringing website. On information and belief, Rakuten, Inc. directs its subsidiaries (including at

[47] https://rakuten.wd1.myworkdayjobs.com/en-US/RakutenRewards/job/Boston-Massachusetts/Sr-Software-Engineer---Machine-Learning-Acceleration--Kubernetes-_1003542 (attached hereto as Ex. V).

least Ebates Performance Marketing and Ebates Inc.) to design its website and operate its website to offer infringing products and services through the www.rakuten.com website that it owns. On information and belief, Rakuten, Inc. provides financial and technical support to support those efforts.

228. Rakuten, Inc. manages IDs and payment functions to provide its users with the ability to utilize the same accounts/IDs with various services in the Rakuten Ecosystem, including on information and belief, the accused website and mobile applications.

229. Rakuten, Inc.'s active inducement, as described in this section, has led to infringement of the '676 patent by at least Ebates Performance Marketing, Ebates Inc., and end users and customers.

230. On information and belief, to the extent Rakuten, Inc., was not aware that it was encouraging its customers and end users to infringe the '676 patent, its lack of knowledge was based on being willfully blind to the possibility that its acts would cause infringement.

231. IBM has been damaged by the infringement of its '676 patent by Rakuten and will continue to be damaged by such infringement. IBM is entitled to recover from Rakuten the damages sustained by IBM as a result of Rakuten's wrongful acts.

232. The continued infringement by Rakuten of the '676 patent is 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.

233. 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 Rakuten is enjoined therefrom by this Court.

COUNT FOUR
INFRINGEMENT OF THE '234 PATENT

234. IBM incorporates by reference paragraphs 1-233.

235. 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 February 14, 2017. The '234 patent was duly assigned to IBM. A copy of the '234 patent is attached hereto as Exhibit D.

236. In violation of 35 U.S.C. § 271(a), Ebates Performance Marketing and Ebates Inc. have directly infringed one or more of the claims of the '234 patent by having made, designed, offered for sale, sold, provided, used, maintained, and/or supported its websites (including www.rakuten.com) and its mobile applications (including the Rakuten applications for mobile devices running on, for example, the Apple iOS and Google Android operating systems). Alternatively, Ebates Performance Marketing and Ebates Inc. have contributed to the infringement of the claims of the '234 patent in violation of 35 U.S.C. § 271(c) by selling, offering to sell, and/or supplying components, materials or apparatuses for use in practicing the patented methods of the '234 patent by end users and consumers, as described in this section. Alternatively, Ebates Performance Marketing and Ebates Inc. have induced others, including end users and customers, to infringe one or more of the claims of the '234 patent in violation of 35 U.S.C. § 271(b), as described below.

237. At least Ebates Performance Marketing's infringement is continuing in view of its current role in owning and operating the Rakuten website and mobile applications, as explained below. In view of Ebates Inc.'s apparent past role in owning and operating the Rakuten website and mobile applications, Ebates Inc. has infringed the '234 patent, at least in the past, for the same reasons explained below for Ebates Performance Marketing's continuing infringement.

238. For example, Ebates Performance Marketing directly infringes at least claim 1 of the ’234 patent through www.rakuten.com and the Rakuten mobile applications, at least by:

a. generating a portal page (such as the in-store page on Rakuten’s mobile application), wherein the portal page includes a plurality of portlets (such as each offer displayed on the in-store page);

b. determining whether a subset of portlets is stackable (such as organizing the individual In-Store or Dining Offers in the Rakuten mobile application);

c. responsive to the subset of portlets being stackable, identifying two or more stacks of portlets that are stackable (such as the sets of In-Store or Dining Offers in the Rakuten mobile application), and;

d. generating the portal page (such as the in-store page on Rakuten’s mobile application) 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 In-Store Offers) 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 options for the user to select other stacks of portlets not currently presented to the user, such as Dining Offers or All Offers in the Rakuten mobile app).

239. For example, Ebates Performance Marketing directly infringes at least claim 4 of the ’234 patent through www.rakuten.com and the Rakuten mobile applications, at least by:

a. obtaining a user’s preference for stacking portlets by loading a user profile (such as Ebates Performance Marketing obtaining user characteristics, e.g., recent purchases or recently visited stores);

b. wherein the sublet of portlets is determined to be stackable based on the user's preference (such as using user characteristics to make recommendations to the user in the Rakuten mobile application).

240. Ebates Performance Marketing and Ebates Inc. have had knowledge of the '234 patent and their direct and indirect infringement since at least March 2, 2021 through IBM's numerous communications with Rakuten, Inc. and its subsidiaries, as well as Rakuten's Japanese and U.S. outside counsel authorized to receive and respond to communications regarding IBM's claims on behalf of Rakuten, Inc. and its subsidiaries, outlined in the section titled "Defendants' Knowledge Of The Patents-In-Suit And Infringement" above.

241. Ebates Performance Marketing also indirectly infringes one or more claims of the '234 patent through its websites (including www.rakuten.com) and its mobile applications (including the Rakuten applications for mobile devices running on, for example, the Apple iOS and Google Android operating systems). On information and belief, in certain circumstances, client devices and software (e.g., devices and software used by end users and customers of Rakuten's website and the associated mobile applications) directly infringe the '234 patent through the use of the website and mobile applications. In particular, to the extent Ebates Performance Marketing does not perform the method steps, in certain circumstances, client devices and software (e.g., devices and software used by end users, customers, and potential customers of Rakuten's website and the associate mobile applications) perform at least the method of stacking portlets in portal pages recited by claims 1 and 4 of the '234 patent.

242. On information and belief, despite knowledge of the infringement of the '234 patent, Ebates Performance Marketing has intended and continues to intend to contribute to patent infringement by third parties by selling, offering to sell, and/or supplying components, materials,

or apparatuses for use in practicing the patented methods of the ’234 patent by end users and consumers, as described in this section.

243. For example, Ebates Performance Marketing provides computer code (such as HTML, JavaScript, and image files) underlying the Rakuten website and mobile applications to customers and end users for use in infringing the ’234 patent, and such computer code does not have substantial non-infringing uses. Such computer code is especially made and/or especially adapted for use in infringing the ’234 patent and is not a staple article or commodity of commerce suitable for substantial non-infringing use. The only substantial use of Rakuten’s computer code responses is for the claimed subject matter involving formatting and serving web content as described in the ’234 patent.

244. Further, as a part of providing said computer code, Ebates Performance Marketing enters into binding contracts with end users and customers to use Rakuten’s website and mobile applications, including in an infringing manner, including by binding the users to a terms of service governing access to and use of the accused website and mobile applications.

245. On information and belief, Ebates Performance Marketing receives valuable consideration from customers and end users located in this judicial district, including information provided by customers and end users, information automatically collected from customers and end users, and monetary consideration from customers and end users who purchase products through Rakuten’s website and mobile applications. When customers and end users in this judicial district use the accused website and mobile applications, Ebates Performance Marketing collects a fee for sending a customer to a third party store via the accused website or mobile applications. The website and mobile applications are especially made and/or especially adapted for use in infringing the Patents-In-Suit, at least as detailed above, and are not a staple article or commodity of

commerce suitable for substantial non-infringing uses because, among other things, the components sent to users are uniquely designed only to access the infringing aspects of Rakuten's website and mobile applications.

246. On information and belief, despite its knowledge of the infringement of the '234 patent, Ebates Performance Marketing has intended and continues to intend to induce patent infringement by third parties, including at least the direct infringement by end users and customers, as described in this section. Ebates Performance Marketing has and continues to encourage and instruct customers and end users to use Rakuten's website and the associated mobile applications in a manner that infringes the '234 patent by advertising the website and mobile applications, providing customer support, and designing its 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.

247. On information and belief, to the extent Ebates Performance Marketing was not aware that it was encouraging its customers and end users to infringe the '234 patent, its lack of knowledge was based on being willfully blind to the possibility that its acts would cause infringement.

248. Additionally, Rakuten, Inc. has induced others, including Ebates Performance Marketing, Ebates Inc., and end users and customers, to infringe one or more of the claims of the '234 patent in violation of 35 U.S.C. § 271(b), as described below.

249. On information and belief, despite its knowledge of the infringement of the '234 patent, Rakuten, Inc. has intended and continues to intend to actively induce patent infringement by third parties, including at least the direct infringement by Ebates Performance Marketing, Ebates Inc., and end users and customers, as described above. Rakuten, Inc. has and continues to encourage and instruct customers and end users to use the Rakuten website and the Rakuten mobile

applications in a manner that infringes the ’234 patent by advertising the website and mobile applications, providing customer support, and designing its 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, Rakuten, Inc. operates the www.rakuten.jp website, which actively induces users to go to and use the infringing www.rakuten.com website.

250. Rakuten, Inc. exercises close control over its subsidiaries, including Ebates Performance Marketing and Ebates Inc., including over their infringing activities. For example, Rakuten, Inc. has established Rakuten Group Rules and Regulations, concerning philosophy, group governance, corporate management, risk management, and compliance of the subsidiaries’ operations. Important business operations of Rakuten, Inc.’s subsidiaries are conducted in accordance with the “Rakuten Group Table of Duties and Authorities” and the “Rakuten Group Guidelines.” The control of Rakuten subsidiaries includes overlapping executives and directors among Rakuten, Inc. and Rakuten entities in the U.S.

251. Rakuten subsidiaries also comply with a system of decision-making by Rakuten, Inc., and also report to Rakuten, Inc.’s Internal Audit Department, an organization under the direct control of the President and Representative Director of Rakuten, Inc. This system ensures cooperation with the internal audit departments of subsidiaries and ensure the appropriateness of the subsidiaries’ operations by conducting internal audits throughout the Rakuten Group.

252. Rakuten, Inc. has also established the Rakuten Group Ethics Charter, which includes policies and guidelines covering all areas of its subsidiaries operations including legal compliance, labor practices, information security, quality management, and sustainability.

253. Rakuten, Inc. has also appointed a Chief Compliance Officer to oversee Rakuten, Inc.’s subsidiaries under the supervision of the Chief Operating Officer, and a Company

Compliance Officer for each Rakuten subsidiary. The Company Compliance Officer is responsible for the overall management of the Group. The Company Compliance Officer works with the Function Chief Compliance Officer to promote compliance programs and actionable monitoring, and is responsible for strengthening the Group-wide compliance system.

254. Rakuten, Inc. has also established committees for quality improvement and quality assurance with the participation of Rakuten, Inc. and Rakuten, Inc.'s subsidiaries. The Quality Improvement Committee monitors quality and shares best practices to promote the implementation of measures and ensure their penetration into each service. The Quality Assurance Committee discusses the establishment, revision, and abolition of standards and guidelines, as well as the evaluation and improvement of measures across Rakuten, Inc. and its subsidiaries.

255. On information and belief, Rakuten, Inc. trains technical employees who are responsible for the design, operation, and development of the Rakuten website and mobile applications, including technical employees at the RIT. As described above, Rakuten posts job listings for technical positions related to developing the Rakuten website and mobile applications, including a position for Senior Software Engineer at the RIT whose responsibilities include "assisting machine learning efforts by optimizing novel ML algorithms into production-ready code, developing new tools to accelerate model-building efforts, educating fellow members on best practices in software design, and maintaining world-class on prem and in cloud compute clusters."[48] Researchers and engineers at Rakuten, Inc. and the RIT, such as Senior Software Engineers, develop aspects of the infringing website and mobile applications.

[48] https://rakuten.wd1.myworkdayjobs.com/en-US/RakutenRewards/job/Boston-Massachusetts/Sr-Software-Engineer---Machine-Learning-Acceleration--Kubernetes-_1003542 (attached hereto as Ex. V).

256. Rakuten, Inc. also owns and maintains the www.rakuten.com domain of the infringing website. On information and belief, Rakuten, Inc. directs its subsidiaries (including at least Ebates Performance Marketing and Ebates Inc.) to design its website and operate its website to offer infringing products and services through the www.rakuten.com website that it owns. On information and belief, Rakuten, Inc. provides financial and technical support to support those efforts.

257. Rakuten, Inc. manages IDs and payment functions to provide its users with the ability to utilize the same accounts/IDs with various services in the Rakuten Ecosystem, including on information and belief, the accused website and mobile applications.

258. Rakuten, Inc.'s active inducement, as described in this section, has led to infringement of the '849 patent by at least Ebates Performance Marketing, Ebates Inc., and end users and customers.

259. On information and belief, to the extent Rakuten, Inc., was not aware that it was encouraging its customers and end users to infringe the '234 patent, its lack of knowledge was based on being willfully blind to the possibility that its acts would cause infringement.

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

261. The continued infringement by Rakuten of the '234 patent is 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.

262. 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 Rakuten is enjoined therefrom by this Court.

COUNT FIVE
INFRINGEMENT OF THE '443 PATENT

263. IBM incorporates by reference paragraphs 1-262.

264. IBM is the owner of all right, title and interest in the '443 patent. The '443 patent was duly and properly issued by the USPTO on July 11, 2006. The '443 patent was duly assigned to IBM. A copy of the '443 patent is attached hereto as Exhibit F.

265. In violation of 35 U.S.C. § 271(a), Ebates Performance Marketing and Ebates Inc. have directly infringed one or more of the claims of the '443 patent by having made, designed, offered for sale, sold, provided, used, maintained, and/or supported its websites (including www.rakuten.com) and its mobile applications (including the Rakuten applications for mobile devices running on, for example, the Apple iOS and Google Android operating systems). Alternatively, Ebates Performance Marketing and Ebates Inc. have contributed to the infringement of the claims of the '443 patent in violation of 35 U.S.C. § 271(c) by selling, offering to sell, and/or supplying components, materials or apparatuses for use in practicing the patented methods of the '443 patent by end users and consumers, as described in this section. Alternatively, Ebates Performance Marketing and Ebates Inc. have induced others, including end users and customers, to infringe one or more of the claims of the '443 patent in violation of 35 U.S.C. § 271(b), as described below.

266. At least Ebates Performance Marketing's infringement is continuing in view of its current role in owning and operating the Rakuten website and mobile applications, as explained below. In view of Ebates Inc.'s apparent past role in owning and operating the Rakuten website

and mobile applications, Ebates Inc. has infringed the ’443 patent, at least in the past, for the same reasons explained below for Ebates Performance Marketing’s continuing infringement.

267. Ebates Performance Marketing infringes claims 1-20 of the ’443 patent, as described below.

268. For example, Ebates Performance Marketing directly infringes at least claim 1 of the ’443 patent through www.rakuten.com and the Rakuten mobile applications by performing a method of targeting at least one associated advertisement from an Internet search having access to an information repository by a user, comprising:

a. identifying at least one search result item from a search result of said Internet search by said user (such as a user’s search on www.rakuten.com resulting in a list of product items, each product item relating to a unique “ProdID” and unique “RatID” and having a title);

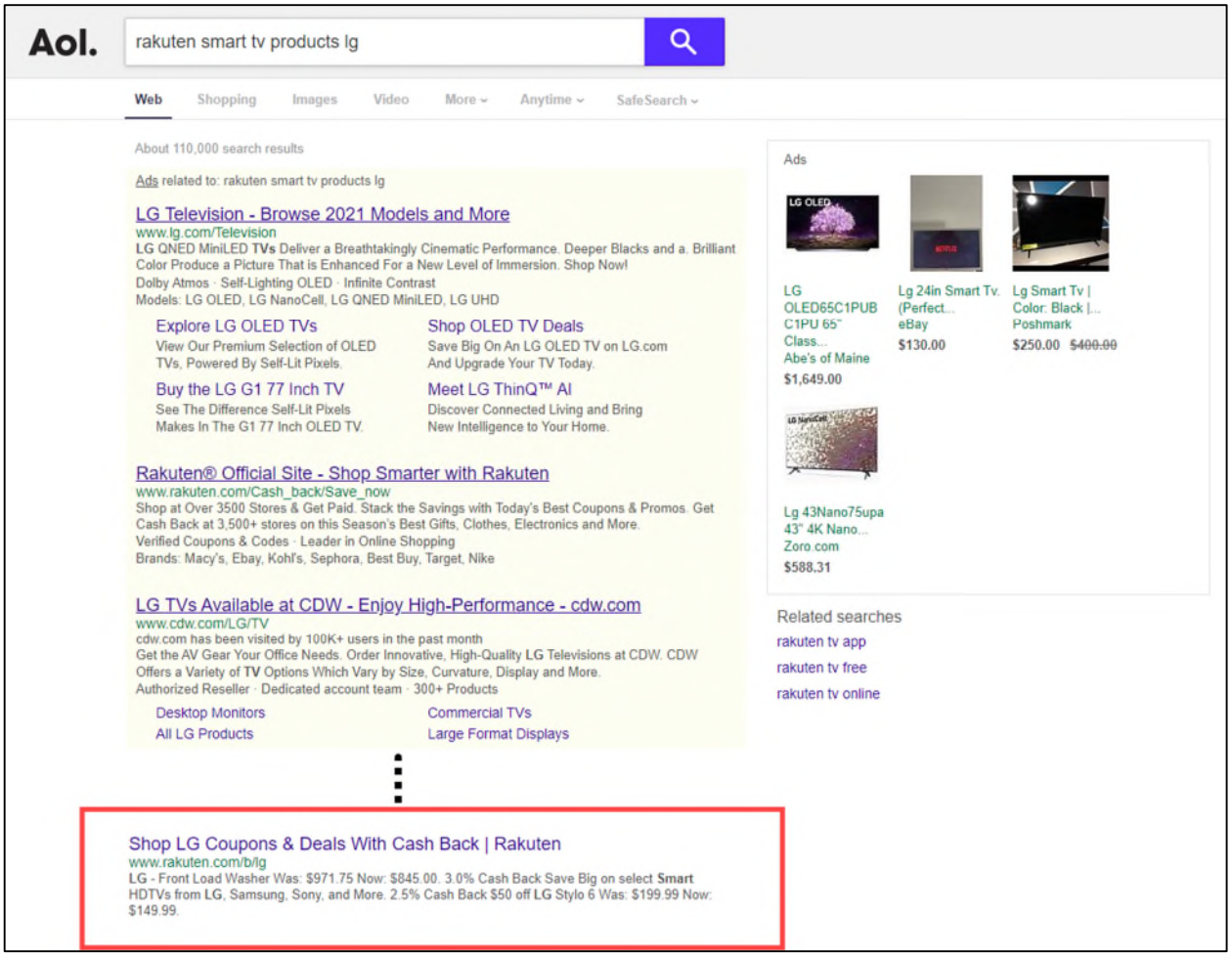
b. searching for said at least one associated advertisement within said repository using said at least one search result item (such as using the selected search result item’s “ProdID” to search the Rakuten database);

c. identifying said at least one associated advertisement from said repository having at least one word that matches said at least one search result item (such as using the search result item’s “ProdID” to identify an advertisement in the Rakuten database, where the advertisement has a “RatID” that matches the search result item’s “RatID,” and where the advertisement’s title and search result item’s title share a common word); and

d. correlating said at least one associated advertisement with said at least one search result item (such as displaying the identified advertisement along with the search result item when the user selects a “Compare Stores” button below the search result item).

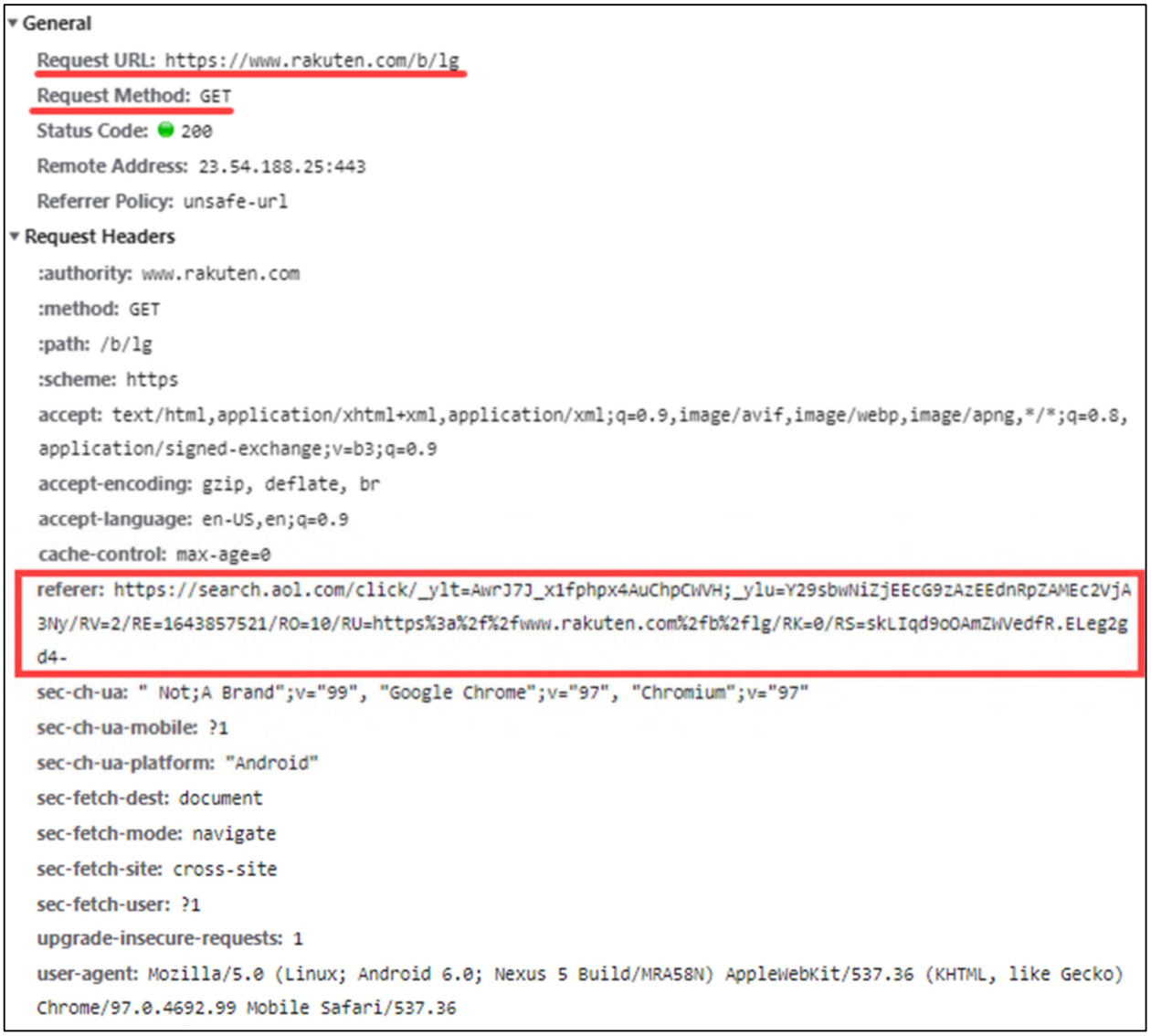
269. In *Chewy, Inc. v. International Business Machines Corp.*, C.A. No. 1:21-cv-01319-JSR (S.D.N.Y.) ("Chewy Litigation"), the United States District Court for the Southern District of New York issued a *Markman* Order in which it construed the term "Internet search" as a "search through an Internet search engine, e.g. google.com or yahoo.com." Chewy Litigation, D.I. 90 at 31. That claim construction is not binding on this Court. Regardless, Ebates Performance Marketing directly infringes at least claim 1 of the '443 patent through www.rakuten.com and the Rakuten mobile applications under the construction of "Internet search" from the Chewy Litigation.

270. Applying the construction of "Internet search" from the Chewy Litigation, Ebates Performance Marketing performs "a method of targeting at least one associated advertisement from a search through an Internet search engine, e.g. google.com or yahoo.com having access to an information repository by a user" that further comprises "identifying at least one search result item from a search result of said search through an Internet search engine, e.g. google.com or yahoo.com by said user." For example, when a user performs a search for "rakuten smart tv products lg" on the AOL Internet search engine at aol.com, AOL returns a listing of search results, including a link to the www.rakuten.com:

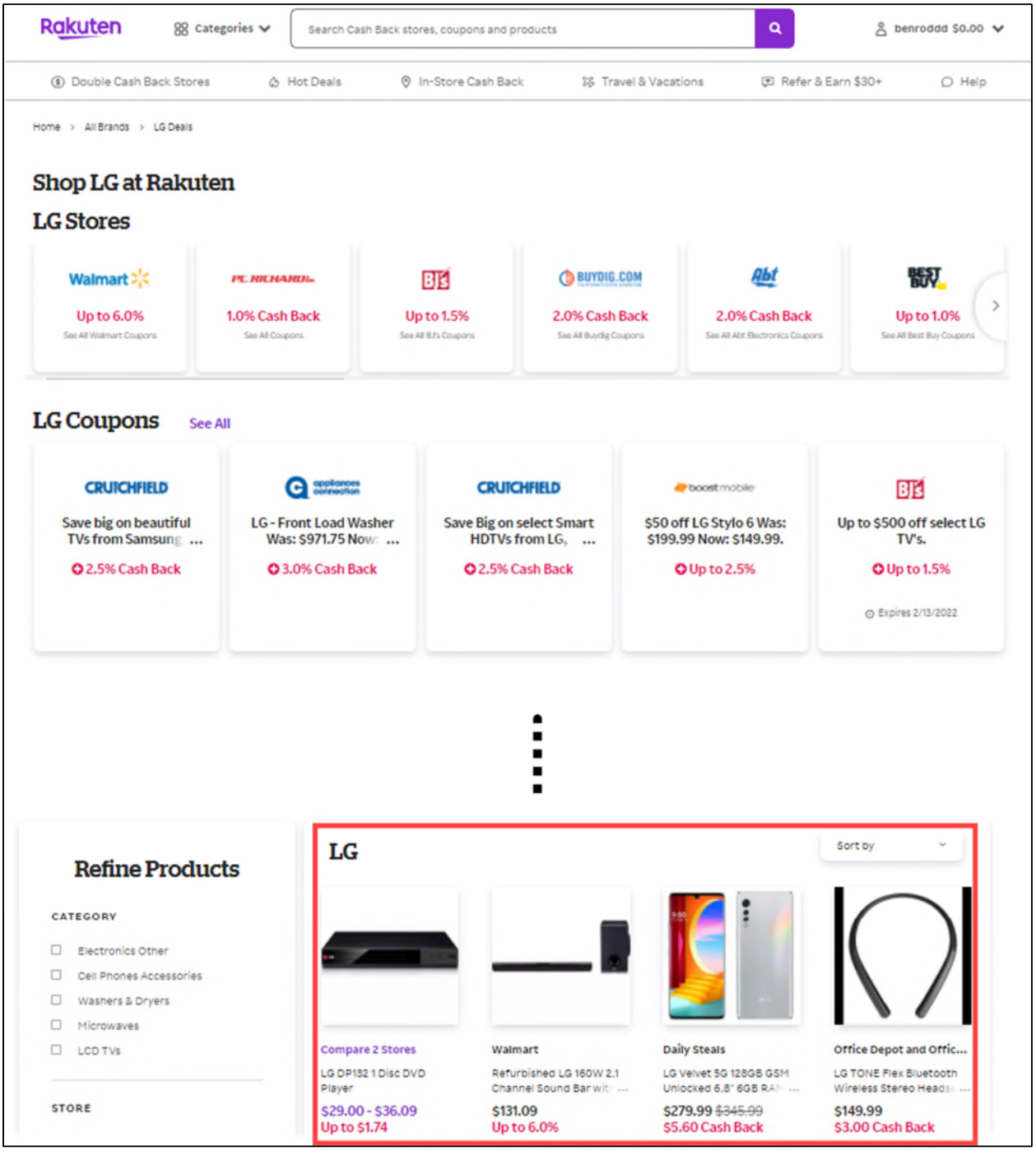


Search on www.aol.com for "rakuten smart tv products lg," performed on February 2, 2022.

271. When the user performing the search on aol.com selects the link to www.rakuten.com, www.rakuten.com identifies search result items that come from and are responsive to the initial search on aol.com:



HTTP header for the webpage https://www.rakuten.com/b/lg accessed via an AOL search (last accessed February 2, 2022).



https://www.rakuten.com/b/lg (last accessed February 2, 2022).

272. Alternatively, to the extent the "identifying at least one search result item" step is performed by a third party (in addition to and/or separate from Ebates Performance Marketing's performance), such as a user, browser, or mobile operating system, that performance is attributable to Ebates Performance Marketing at least because Ebates Performance Marketing has an agency or

contractual relationship with said third party, or Ebates Performance Marketing controls or directs the performance of said third party. For example, Ebates Performance Marketing directs or controls the performance of the "identifying at least one search result item" step by users, browsers, and mobile operating systems because it, for example, conditions receipt of a benefit, such as viewing similar products through Rakuten's website and mobile applications, on the performance of the claimed steps, and establishes the manner or timing of the performance by, for example, presenting similar products in response to a user's selection of a particular product using its underlying computer code.

273. For another example, Ebates Performance Marketing controls or directs the performance of the "identifying at least one search result item" step by users, browsers, and mobile operating systems because it profits from the performance by, for example, allowing users to use Ebates Performance Marketing's services to view products and other advertisements. Ebates Performance Marketing has the right to stop or limit infringement, by, for example, not sending HTML and other data to the reception system.

274. Further to this example, Ebates Performance Marketing directly infringes at least claim 15 of the '443 patent through www.rakuten.com and the Rakuten mobile applications by providing related advertisements for search result items from a search of an information repository, comprising:

a. matching said search result items to said related advertisements (such as matching items resulting from a search on www.rakuten.com to advertisements for products or services related to the search result items using the "ProdIDs" of the search result items);

b. designating each of said search result items that have said related advertisements matched therewith (such as displaying the search result items in a pop-up window with the related advertisements);

c. providing a corresponding graphical user interface for each of said search result items so designated for subsequent user selection (such as providing a selectable "Shop Now" button for each of the search result items so designated);

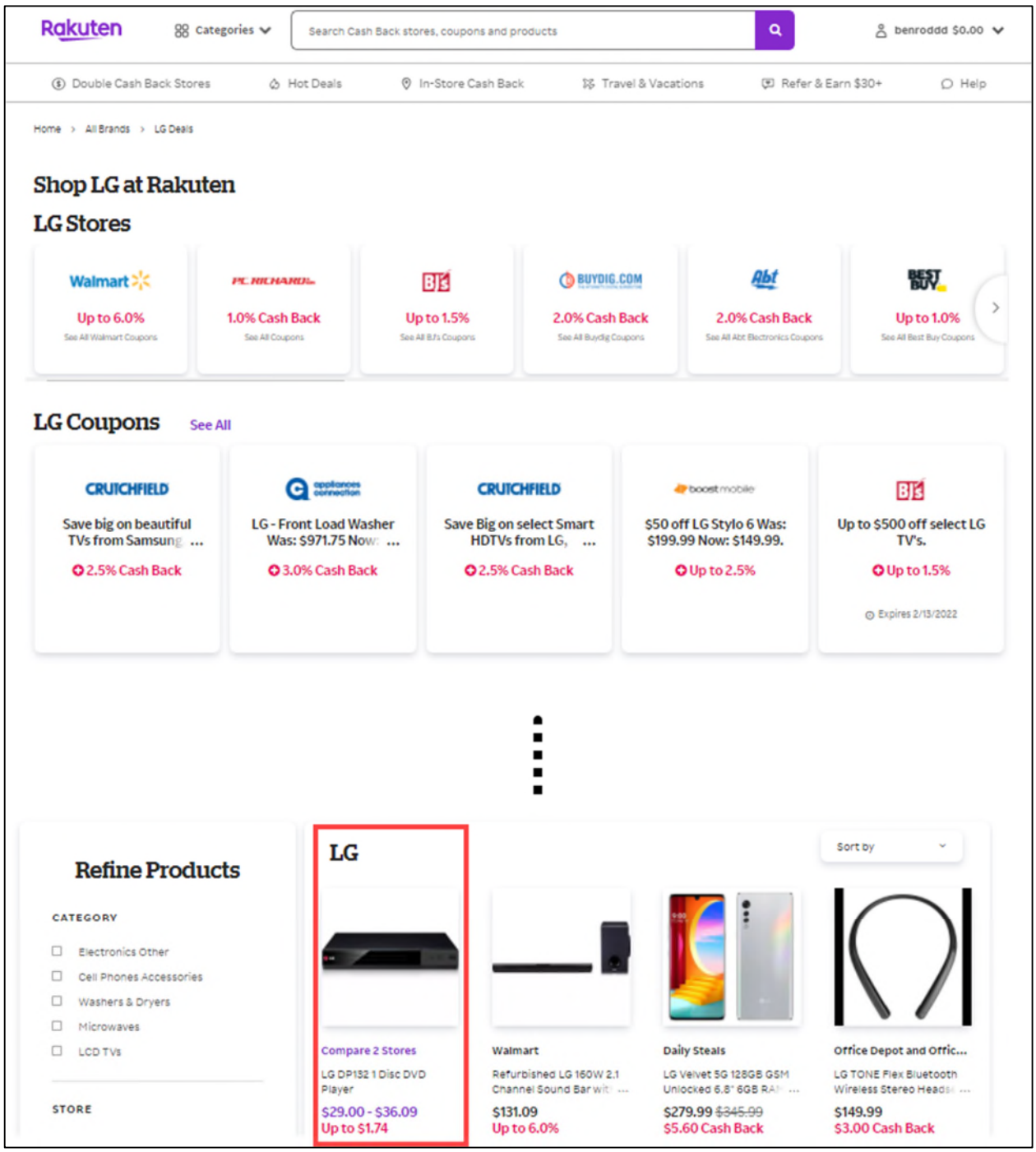
d. searching and retrieving said related advertisements for one of said search result items when said corresponding graphical user interface is selected by a user (such as searching and retrieving related advertisements for the search result item when the user selects the "Shop Now" button); and,

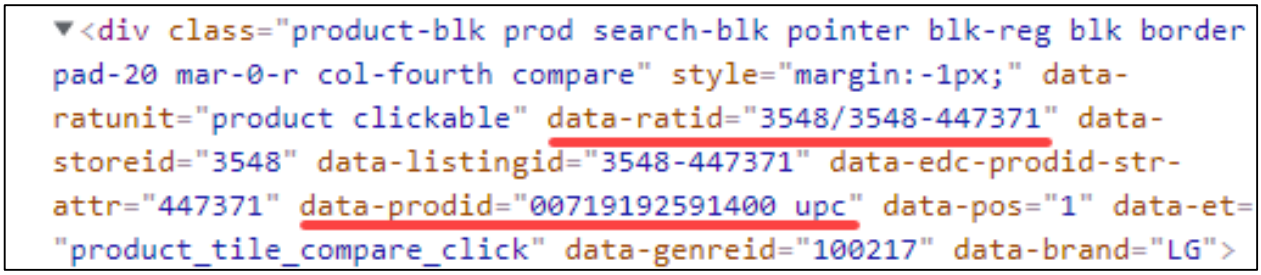
e. formatting and displaying said related advertisements upon selection (such as formatting and displaying the related advertisements on their own webpage upon selection).

275. In the Chewy Litigation, the United States District Court for the Southern District of New York issued a *Markman* Order in which it construed the term "matching said search result items to said related advertisements" as "identifying said related advertisements from said information repository having a word that matches a keyword from said search result items." Chewy Litigation, D.I. 90 at 40. That claim construction is not binding on this Court. Regardless, Ebates Performance Marketing directly infringes at least claim 15 of the '443 patent through www.rakuten.com and the Rakuten mobile applications under the construction of "matching said search result items to said related advertisements" from the Chewy Litigation.

276. Applying the construction of "matching said search result items to said related advertisements" from the Chewy Litigation, Ebates Performance Marketing "identif[ies] said related advertisements from said information repository having a word that matches a keyword from said

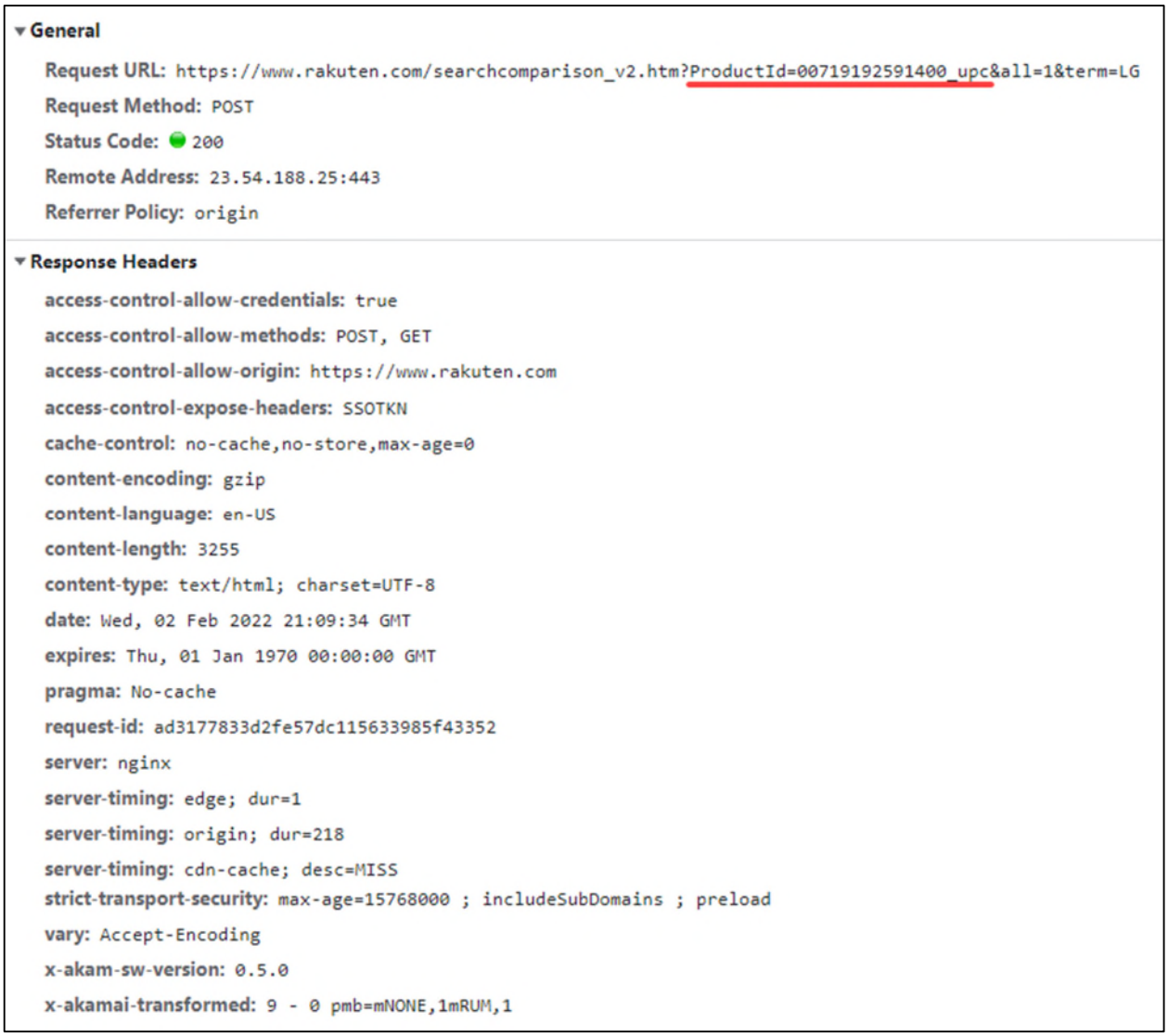
search result items." For example, the search result item "LG DP132 Disc DVD Player" has a data-prodid of "00719192591400" and a data-ratid of "3548/3548-447371."





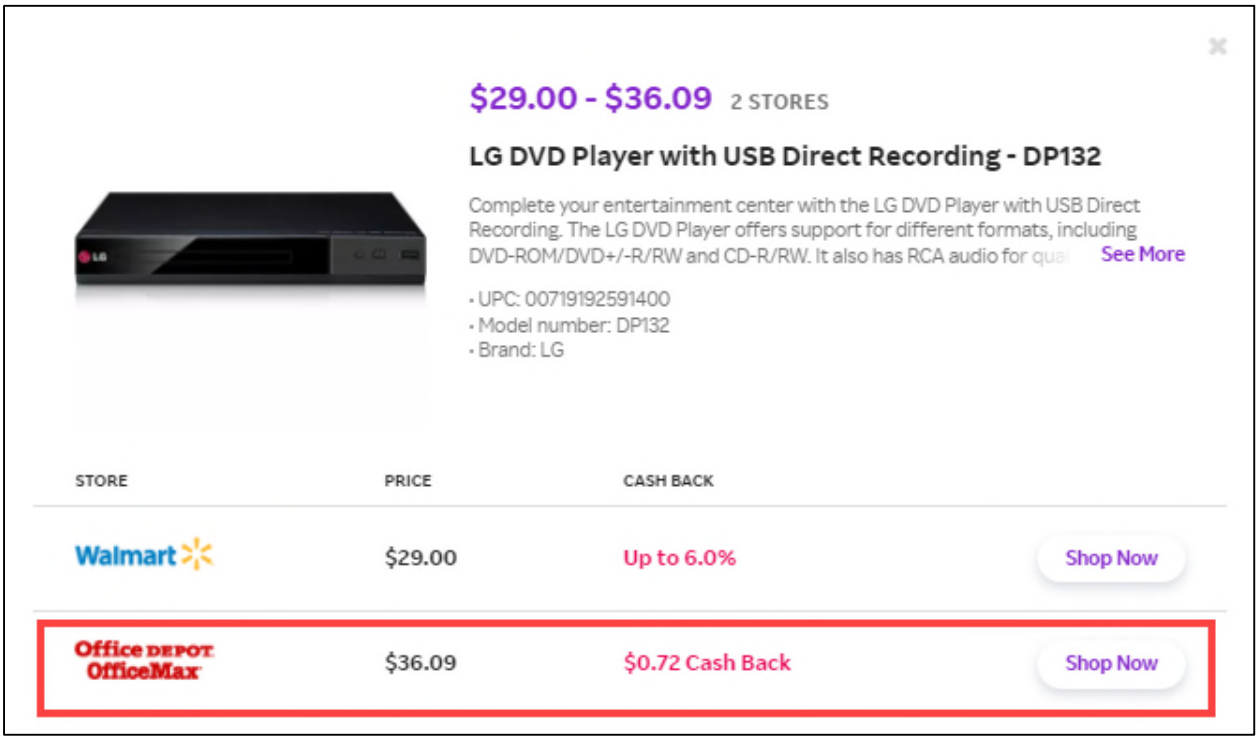
https://www.rakuten.com/b/lg (last accessed February 2, 2022).

277. www.rakuten.com identifies related advertisements using the search result item's "data-prodid" as input:



HTTP header for the webpage https://www.rakuten.com/searchcomparison_v2.htm?ProductId=00719192591400_upc&all=1&term=LG (last accessed February 2, 2022).

278. The related advertisements have a word that matches a keyword from said search result items, such as an "itemId" of the related advertisement that matches the "rat-id" of the search result item:

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<a title="Get a great deal from Office Depot and OfficeMax plus 2.0% Cash
    Back from Rakuten!" rel="nofollow" target="_blank" href="/officedepot
    .com_3548-xfas?store_url=https%3A%2F%2Fwww.officedepot
    .com%2Fa%2Fproducts%2F447371%2FLG-DP132-1-Disc-DVD
    -Player%2F&sourceName=Web-Desktop&itemId=3548-447371&itemGenre
    =100217&itemPrice=36.09" data-navigation-id="23123" class="blk">
  <img src="https://static.ebates.com/img/store/3548
      /officedepot_icon_100x27a.gif" alt="Office Depot and OfficeMax">
```

https://www.rakuten.com/searchcomparison_v2.htm?ProductId=00719192591400_upc&all=1&term=LG (last accessed February 2, 2022).

279. Alternatively, to the extent the "matching said search result items to said related advertisements" step is performed by a third party (in addition to and/or separate from Ebates Performance Marketing's performance), such as a third party service, that performance is attributable to Ebates Performance Marketing at least because Ebates Performance Marketing has an agency or

contractual relationship with said third party, or Ebates Performance Marketing controls or directs the performance of said third party.

280. Alternatively, to the extent the "identifying at least one search result item" step is performed by a third party (in addition to and/or separate from Ebates Performance Marketing's performance), such as a user, browser, or mobile operating system, that performance is attributable to Ebates Performance Marketing at least because Ebates Performance Marketing has an agency or contractual relationship with said third party, or Ebates Performance Marketing controls or directs the performance of said third party. For example, Ebates Performance Marketing directs or controls the performance of the "identifying at least one search result item" step by users, browsers, and mobile operating systems because it, for example, conditions receipt of a benefit, such as viewing similar products through Rakuten's website and mobile applications, on the performance of the claimed steps, and establishes the manner or timing of the performance by, for example, presenting similar products in response to a user's selection of a particular product using its underlying computer code. For another example, Ebates Performance Marketing controls or directs the performance of the "identifying at least one search result item" step by users, browsers, and mobile operating systems because it profits from the performance by, for example, allowing users to use Ebates Performance Marketing's services to view products and other advertisements. Ebates Performance Marketing has the right to stop or limit infringement, by, for example, not sending HTML and other data to the reception system.

281. Ebates Performance Marketing and Ebates Inc. have had knowledge of the '443 patent and their direct and indirect infringement since at least July 31, 2019 through IBM's numerous communications with Rakuten, Inc. and its subsidiaries, as well as Rakuten's Japanese and U.S. outside counsel authorized to receive and respond to communications regarding IBM's

claims on behalf of Rakuten, Inc. and its subsidiaries, outlined in the section titled "Defendants' Knowledge Of The Patents-In-Suit And Infringement" above.

282. Ebates Performance Marketing also indirectly infringes one or more claims of the '443 patent through its websites (including www.rakuten.com) and its mobile applications (including the Rakuten applications for mobile devices running on, for example, the Apple iOS and Google Android operating systems). On information and belief, in certain circumstances, client devices and software (e.g., devices and software used by end users and customers of Rakuten's website and the associated mobile applications) directly infringe the '443 patent through the use of the website and mobile applications. In particular, to the extent Ebates Performance Marketing does not perform the method steps, in certain circumstances, client devices and software (e.g., devices and software used by end users, customers, and potential customers of Rakuten's website and the associated mobile applications) perform at least the method of identifying a search result item from a search result of an Internet search by a user recited by claim 1 of the '443 patent.

283. On information and belief, despite knowledge of the infringement of the '443 patent, Ebates Performance Marketing has intended and continues to intend to contribute to patent infringement by third parties by selling, offering to sell, and/or supplying components, materials, or apparatuses for use in practicing the patented methods of the '443 patent by end users and consumers, as described in this section.

284. For example, Ebates Performance Marketing provides computer code (such as HTML, JavaScript, and image files) underlying the Rakuten website and mobile applications to customers and end users for use in infringing the '443 patent, and such computer code does not have substantial non-infringing uses. Such computer code is especially made and/or especially adapted for use in infringing the '443 patent and is not a staple article or commodity of commerce

suitable for substantial non-infringing use. The only substantial use of such computer code is for the claimed subject matter involving searching for and retrieving advertisements using search result items as described in the '443 patent.

285. Further, as a part of providing said computer code, Ebates Performance Marketing enters into binding contracts with end users and customers to use Rakuten's website and mobile applications, including in an infringing manner, by binding the users to a terms of use governing access to and use of the accused website and mobile applications.

286. Ebates Performance Marketing receives valuable consideration from customers and end users located in this judicial district, including information provided by customers and end users, information automatically collected from customers and end users, and monetary consideration from customers and end users who purchase products and other pet services through Rakuten's website and mobile applications. When customers and end users in this judicial district use the accused website and/or mobile applications, Ebates Performance Marketing collects information about the customers and end users, their devices, and their interaction with the accused website and the associated mobile applications. Ebates Performance Marketing works with service providers and advertising networks to track and manage cookie information and activities of customers and end users across different websites and devices. Third parties use cookie information collected by Ebates Performance Marketing to deliver advertisements to end users and customers based on their use of the accused website and mobile applications. Ebates Performance Marketing's business is funded through advertising. The applications and website are especially made and/or especially adapted for use in infringing the Patents-In-Suit, including the '443 patent, at least as detailed above, and are not a staple article or commodity of commerce suitable for substantial non-infringing uses because, among other things, the components sent to users are

uniquely designed only to access the infringing aspects of Rakuten's website and mobile applications.

287. On information and belief, despite its knowledge of the infringement of the '443 patent, Ebates Performance Marketing has intended and continues to induce patent infringement by third parties, including at least the direct infringement by end users and customers, as described in this section. Ebates Performance Marketing has and continues to encourage and instruct customers and end users to use Rakuten's website and the associated mobile applications in a manner that infringes the '443 patent by advertising the website and mobile applications, providing customer support, and designing its 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 '443 patent.

288. On information and belief, to the extent Ebates Performance Marketing was not aware that it was encouraging its customers and end users to infringe the '443 patent, its lack of knowledge was based on being willfully blind to the possibility that its acts would cause infringement.

289. Additionally, Rakuten, Inc. has induced others, including Ebates Performance Marketing, Ebates Inc., and end users and customers, to infringe one or more of the claims of the '443 patent in violation of 35 U.S.C. § 271(b), as described below.

290. On information and belief, despite its knowledge of the infringement of the '443 patent, Rakuten, Inc. has intended and continues to intend to actively induce patent infringement by third parties, including at least the direct infringement by Ebates Performance Marketing, Ebates Inc., and end users and customers, as described above. Rakuten, Inc. has and continues to encourage and instruct customers and end users to use the Rakuten website and the Rakuten mobile applications in a manner that infringes the '443 patent by advertising the website and mobile

applications, providing customer support, and designing its 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 '443 patent. For example, Rakuten, Inc. operates the www.rakuten.jp website, which actively induces users to go to and use the infringing www.rakuten.com website.

291. Rakuten, Inc. exercises close control over its subsidiaries, including Ebates Performance Marketing and Ebates Inc., including over their infringing activities. For example, Rakuten, Inc. has established Rakuten Group Rules and Regulations, concerning philosophy, group governance, corporate management, risk management, and compliance of the subsidiaries' operations. Important business operations of Rakuten, Inc.'s subsidiaries are conducted in accordance with the "Rakuten Group Table of Duties and Authorities" and the "Rakuten Group Guidelines." The control of Rakuten subsidiaries includes overlapping executives and directors among Rakuten, Inc. and Rakuten entities in the U.S.

292. Rakuten subsidiaries also comply with a system of decision-making by Rakuten, Inc., and also report to Rakuten, Inc.'s Internal Audit Department, an organization under the direct control of the President and Representative Director of Rakuten, Inc. This system ensures cooperation with the internal audit departments of subsidiaries and ensures the appropriateness of the subsidiaries' operations by conducting internal audits throughout the Rakuten Group.

293. Rakuten, Inc. has also established the Rakuten Group Ethics Charter, which includes policies and guidelines covering all areas of its subsidiaries operations including legal compliance, labor practices, information security, quality management, and sustainability.

294. Rakuten, Inc. has also appointed a Chief Compliance Officer to oversee Rakuten, Inc.'s subsidiaries under the supervision of the Chief Operating Officer, and a Company Compliance Officer for each Rakuten subsidiary. The Company Compliance Officer is

responsible for the overall management of the Group. The Company Compliance Officer works with the Function Chief Compliance Officer to promote compliance programs and actionable monitoring, and is responsible for strengthening the Group-wide compliance system.

295. Rakuten, Inc. has also established committees for quality improvement and quality assurance with the participation of Rakuten, Inc. and Rakuten, Inc.'s subsidiaries. The Quality Improvement Committee monitors quality and shares best practices to promote the implementation of measures and ensure their penetration into each service. The Quality Assurance Committee discusses the establishment, revision, and abolition of standards and guidelines, as well as the evaluation and improvement of measures across Rakuten, Inc. and its subsidiaries.

296. On information and belief, Rakuten, Inc. trains technical employees who are responsible for the design, operation, and development of the Rakuten website and mobile applications, including technical employees at the RIT. As described above, Rakuten posts job listings for technical positions related to developing the Rakuten website and mobile applications, including a position for Senior Software Engineer at the RIT whose responsibilities include "assisting machine learning efforts by optimizing novel ML algorithms into production-ready code, developing new tools to accelerate model-building efforts, educating fellow members on best practices in software design, and maintaining world-class on prem and in cloud compute clusters."[49] Researchers and engineers at Rakuten, Inc. and the RIT, such as Senior Software Engineers, develop aspects of the infringing website and mobile applications.

297. Rakuten, Inc. also owns and maintains the www.rakuten.com domain of the infringing website. On information and belief, Rakuten, Inc. directs its subsidiaries (including at

[49] https://rakuten.wd1.myworkdayjobs.com/en-US/RakutenRewards/job/Boston-Massachusetts/Sr-Software-Engineer---Machine-Learning-Acceleration--Kubernetes-_1003542 (attached hereto as Ex. V).

least Ebates Performance Marketing and Ebates Inc.) to design its website and operate its website to offer infringing products and services through the www.rakuten.com website that it owns. On information and belief, Rakuten, Inc. provides financial and technical support to support those efforts.

298. Rakuten, Inc. manages IDs and payment functions to provide its users with the ability to utilize the same accounts/IDs with various services in the Rakuten Ecosystem, including on information and belief, the accused website and mobile applications.

299. Rakuten, Inc.'s active inducement, as described in this section, has led to infringement of the '443 patent by at least Ebates Performance Marketing, Ebates Inc., and end users and customers.

300. On information and belief, to the extent Rakuten, Inc., was not aware that it was encouraging its customers and end users to infringe the '443 patent, its lack of knowledge was based on being willfully blind to the possibility that its acts would cause infringement.

301. IBM has been damaged by the infringement of the '443 patent by Rakuten and will continue to be damaged by such infringement. IBM is entitled to recover from Rakuten the damages sustained by IBM as a result of Rakuten's wrongful acts.

302. The continued infringement by Rakuten of the '443 patent is 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.

303. 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 Rakuten is enjoined therefrom by this Court.

RELIEF REQUESTED

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

A. That the ’849 patent has been and continues to be infringed by Rakuten;

B. That Rakuten’s infringement of the ’849 patent has been and continues to be willful;

C. An injunction against further infringement of the ’849 patent;

D. That the ’346 patent has been and continues to be infringed by Rakuten;

E. That Rakuten’s infringement of the ’346 patent has been and continues to be willful;

F. An injunction against further infringement of the ’346 patent;

G. That the ’676 patent has been infringed by Rakuten;

H. That Rakuten’s infringement of the ’676 patent has been and continues to be willful;

I. An injunction against further infringement of the ’676 patent;

J. That the ’234 patent has been and continues to be infringed by Rakuten;

K. That Rakuten’s infringement of the ’234 patent has been and continues to be willful;

L. An injunction against further infringement of the ’234 patent;

M. That the ’443 patent has been and continues to be infringed by Rakuten;

N. That Rakuten’s infringement of the ’443 patent has been and continues to be willful;

O. An injunction against further infringement of the ’443 patent;

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

Q. 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;

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

S. 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

Respectfully submitted,

POTTER ANDERSON & CORROON LLP

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