IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

INTERNATIONAL BUSINESS MACHINES CORPORATION,	)	
Plaintiff,	)	C.A. No. _____
v.	)	**JURY TRIAL DEMANDED**
ZYNGA INC., and CHARTBOOST, INC.,	)	
Defendants.	)	

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff International Business Machines Corporation ("IBM"), for its Complaint for Patent Infringement against Zynga, Inc. ("Zynga") and Chartboost, Inc. ("Chartboost") (collectively, "Defendants"), 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. These investments over the decades have led to innovations touching every industry and changing the way the world connects, including foundational advancements in computer hardware and software, big data analytics, artificial intelligence, and natural language processing. Even in the new frontier of quantum information science, once thought to be a purely academic exercise, IBM has capitalized on its early investments and innovations to become the leader in commercializing this revolutionary technology. 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. IBM believes that the application of intelligence, reason and science can improve business, society and the human condition.

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 and Trademark Office each year. In fact, for each of the last 29 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, its values, and its licensing philosophy.

3. For example, for over twenty years, IBM has been a strong proponent of open-source technologies—technologies that are freely available to use, modify, and redistribute. 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 inventors. When other companies seek to build new businesses on the foundation set by IBM's patented technology, IBM believes that those companies 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 cross license their respective patent portfolios, enabling each to 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 the freedom to operate in their respective markets.

6. The modern technology industry has recognized IBM's pioneering innovations in areas including big data analytics, digital marketplaces, and web-based business. Indeed, IBM's patent portfolio includes many foundational technologies in those areas, such as personalized digital advertising and managing servers and applications. In fact, in the 1980s, IBM partnered with other companies to launch Prodigy, one of the pioneers in online networking and advertising. As a result, dozens of modern technology companies, including Amazon, Apple, Google, and Facebook, have agreed to cross licenses with IBM. Defendants have not.

7. Zynga was founded in 2007. Like many companies before it, Zynga recognized the value in bringing interactive, social experiences onto the web and the internet. Specifically, Zynga successfully launched several mass-market "social games," such as *Words with Friends* and *Farmville*. Unlike physical games sold in brick-and-mortar stores, Zynga offers these products as "free-to-play," where a user can simply download applications or open a web browser to start playing. These games make it easy for users to connect to their existing social media accounts for online play. Zynga generates revenue by selling in-game virtual items to its users, by selling

advertisements, and by operating a mobile advertising and monetization platform with its subsidiary, Chartboost. Zynga is now one of the world's largest providers of social games, with millions of daily users and mobile downloads totaling over four billion. By offering products at this massive scale, Zynga has enjoyed billions of dollars in revenue in recent years.

8. Those in the industry have described Zynga as a "big data company disguised as [a] gaming company." Though Zynga is nominally a gaming company, its success relies on sophisticated data capture, processing, and analytics technology, which enables Zynga's delivery of games and advertisements to millions of users. In its annual report, Zynga tells its investors:

> ***At the core*** of Zynga's live services platform is our ***first-party data network***, which captures key insights about how our players are interacting with our games. We use this data to deliver highly engaging interactive experiences for our players, optimize our user acquisition, monetize our games, and provide advertising services.

Zynga's products and its business model rely on prior innovations in big data, analytics, and online advertising made by IBM and others.

9. Zynga is not alone when it comes to big data, analytics, and online advertising. The wider technology industry has recognized that the data and analytic techniques necessary for providing online services to millions, including gaming, require years of investments in research, development, and innovations. It is not surprising that others would use such techniques rather than develop them themselves, because it is difficult and expensive to develop such techniques without the kind of expertise that IBM provides in this space. Like other modern technology companies, Zynga recognized IBM's expertise in the field and decided to incorporate IBM's prior innovations in big data, analytics, and online advertising instead of spending the time and money to develop its own techniques.

10. As Zynga's business has developed, it has continued to incorporate additional innovations pioneered by IBM. But unlike dozens of Zynga's peers in the industry, Zynga does not have a license to use IBM's patents.

11. Since 2014, IBM has tried to negotiate with Zynga about Zynga's unlicensed use of IBM's patents. Unfortunately, to this day, Zynga has chosen to willfully infringe IBM's patents and even expanded its infringing activity.

12. Over the years, IBM has discovered that Zynga infringes additional IBM patents. IBM has informed Zynga of its expanding liability for willful patent infringement, including by its subsidiary Chartboost, but has been continually met with delay and excuses. For example, IBM specifically identified for Zynga how its products, including the *CSR Racing 2*, *Words with Friends 2*, *Farmville 2: Country Escape*, and *Game of Thrones Slots Casino* games, practice multiple IBM patents. Rather than negotiate an acceptable business resolution with IBM, Zynga engaged in delay tactics, alternating between refusing to meet for weeks at a time and responding only partially to IBM's letters detailing Zynga's infringement.

13. Chartboost, Zynga's subsidiary, also uses IBM's patents without a license. In 2021, IBM twice contacted Chartboost to inform them of its infringement of IBM's patents through its advertising campaign platform. IBM told Chartboost that it was ready to discuss the detailed evidence of Chartboost's infringement and a possible resolution of these issues. After a months-long delay with no reply, Chartboost responded in August 2021 to say that now that Zynga acquired Chartboost, Zynga would handle all discussions with IBM regarding Chartboost and its infringing activities. But Zynga never resolved Chartboost's continued unlicensed use of IBM's patents.

14. After almost eight years without meaningful progress toward a resolution, IBM has brought this lawsuit to address Zynga and Chartboost's unauthorized use of IBM's patented technology.

NATURE OF THE CASE

15. This action arises under 35 U.S.C. § 271 for Zynga, Inc.'s infringement of IBM's United States Patent Nos. 7,072,849 (the "'849 patent"), 7,631,346 (the "'346 patent"), and 7,702,719 (the "'719 patent"), and Chartboost, Inc.'s infringement of the '849 patent and 8,315,904 (the "'904 patent") (collectively the "Patents-In-Suit").

THE PARTIES

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

17. Defendant Zynga, Inc. is a Delaware corporation, with its principal place of business at 699 Eighth Street, San Francisco, California, 94103. Zynga, Inc. is the parent company to Chartboost, Inc.

18. Defendant Chartboost, Inc. is a Delaware corporation with its principal place of business at One Sansome Street, Floor 21, San Francisco, California, 94104.

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). Zynga, Inc. and Chartboost, 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, Zynga, Inc. and

Chartboost, Inc. conduct business in Delaware, at least by offering for sale and selling products and services through its websites and mobile applications, which are accessible in Delaware. Infringement by Zynga, Inc. and Chartboost, Inc. has occurred and continues to occur in Delaware.

22. Personal jurisdiction exists over Zynga, Inc. and Chartboost, Inc. because those entities conduct business in Delaware, at least by offering for sale and selling products and services through its 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 Zynga, Inc. and Chartboost, Inc. because they are entities 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. Recent IBM-affiliated awardees include: Richard L. Garwin, winner of the National Medal of Science in 2002 in recognition of his role in the development of magnetic resonance imaging technology, laser printers, touch-screen monitors, and other technologies; Frances E. Allen, winner the Turing Award in 2006 in recognition of her role in compiler research and data flow optimization; Daniel Lewin, a former IBM researcher who went on to found Akamai Technologies, who was inducted into the National Inventors Hall of Fame in 2017 for his development of algorithms to efficiently deliver content over a network of distributed servers, which led to modern content delivery networks; and Chieko Asakawa, an IBM

researcher who was inducted into the National Inventors Hall of Fame in 2019 in recognition of her invention of the Home Page Reader, the first practical voice browser to provide effective Internet access for the visually impaired.

24. IBM has been awarded the National Medal of Technology and Innovation (NMTI) more times than any other company or organization. The NMTI is the nation's highest honor for technological achievement, bestowed by the president of the United States on America's leading innovators. IBM was awarded the NMTI for its Blue Gene supercomputer in 2008. IBM employees are responsible for technological advances that have become foundational technology that is widely incorporated into use by the global community today. Such technological advances include the dynamic random access memory (DRAMs) found in nearly all modern computers; the 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). In 2021, IBM announced two major breakthroughs in semiconductor design: the world's first 2-nanometer chip technology, fitting 50 billion transistors on a chip the size of a fingernail; and a new approach to semiconductor design called "Vertical-Transport Nanosheet Field Effect Transistor" which could help the semiconductor industry to significantly reduce the energy needed to perform intensive workloads while continuing to pack even more transistors into a fixed space. These breakthroughs promise

significant improvements in cell phone batteries, energy savings in data encryption and crypto-mining operations, and continued expansion of Internet of Things (IoT).

25. In addition, IBM continues to lead the development of next-generation technologies, including quantum computing technology, with products and services such as Qiskit (the industry leading, open-source software development platform for working with quantum computers), Eagle (the first quantum processor to break the 100-qubit barrier unveiled in 2021), and the Quantum Composer (a cloud-based, user-friendly graphical programming tool for building quantum circuits that are then run on real quantum hardware or simulators). Technology evolves quickly and the nature of research and development ambitiously seeks out new discoveries. The inventions that IBM unearths today lay the groundwork for tomorrow's technology.

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

26. IBM's research and development operations differentiate IBM from many other companies. IBM annually spends billions of dollars on 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.

27. 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.

28. 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.

29. 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.

30. 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.

31. 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 personal computer (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.

32. 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.

33. 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 PCs 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.

34. 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.

35. As the '849 patent also explains, simply increasing 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.

36. Conventional approaches to providing advertising in interactive services exacerbated the bottleneck problem, as 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.

37. 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."

38. 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 (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).

39. 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.

40. 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.

41. In the matter of *IBM v. Groupon, Inc.*, C.A. No. 16-122 (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 of 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.

42. 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.

43. 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.

44. 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.

45. 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.

46. 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.

47. 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 (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: "[T]he 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 v. The Priceline Grp., Inc.*, 2016 WL 626495, at *16 (D. Del. Feb. 16, 2016). 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.

48. 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.

49. 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.

50. 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.

51. 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, 1004–05 (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 1007–09. 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.

52. In the matter of *IBM v. Zillow Grp., Inc.*, C.A. No. 20-851 (W.D. Wash.), Zillow filed a motion for judgment on the pleadings, alleging that the ’346 patent was directed to unpatentable subject matter. The Court disagreed, stating that “Zillow has offered no basis for

disagreeing with the previous conclusion [from the *Priceline* case] that the 'true heart of the ['346] invention is the utilization of SSO [single-sign-on] 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 v. Zillow Grp., Inc.*, 549 F. Supp. 3d 1247, 1274 (W.D. Wash. 2021). The Court concluded: "Like the alleged infringers in the Delaware matter, Zillow has not demonstrated that the '346 Patent fails to pass muster under Alice Step One. Thus, the Court need not advance to Alice Step Two, and as to the '346 Patent, Zillow's motion for judgment on the pleadings is DENIED." *Id.* at 1275.

F. IBM Invented Methods For Improving Computer-Generated Promotions By Using Promotion Templates.

53. The inventors of the '904 patent developed the patented technologies to improve how promotions were generated and how they were subsequently managed, organized, and distributed. At the time of the inventions of the '904 patent, increases in computer power and network speeds increased the number and complexity of online advertising. Marketers became increasingly interested in personalized advertising because such advertising had a higher conversion rate—the rate at which recipients would purchase products and services. At the same time, customers came to expect advertisements to be tailored to their particular interests and circumstances.

54. In the prior art, marketers used a top-down system in order to create and distribute promotions. Marketers would create a small number of standardized promotions and query a database for potential customers with particular attributes to find a group of targets who would receive the promotions. Marketers could modify basic information by completing fields in the standardized promotions, much like completing a form when going to the doctor's office. For example, marketers could use "mail merge" functionality to insert the customer's name, email,

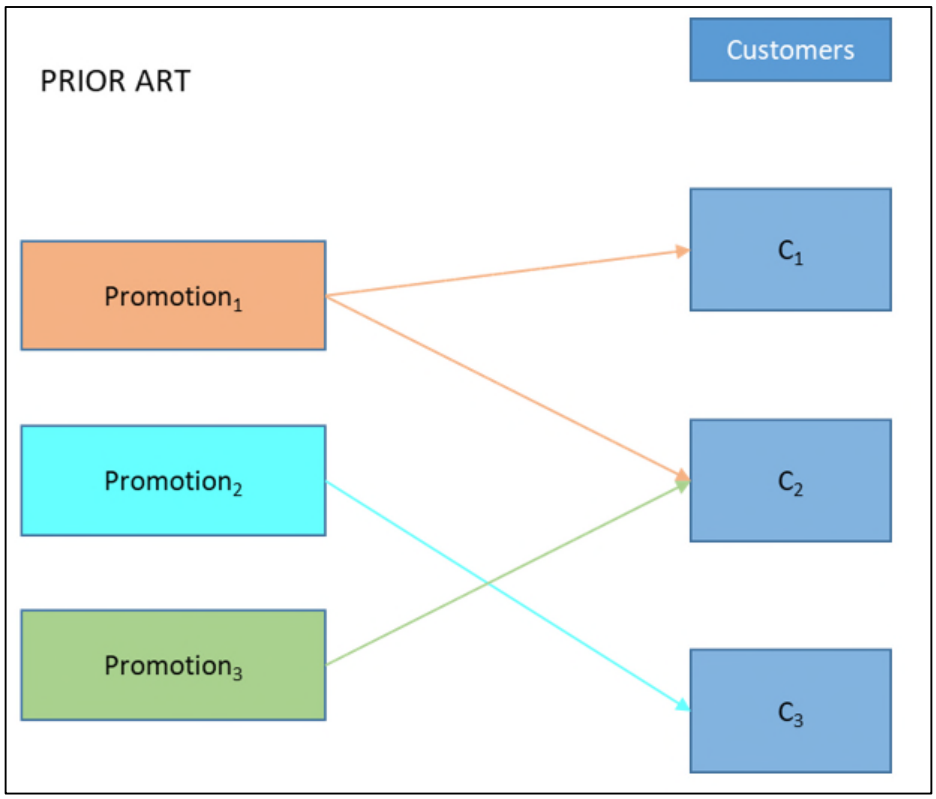
physical address, and other characteristics into preset fields on preexisting promotions. Using the mail merge technique, marketers could create the impression of personalized advertising—as long as the number of promotions remained manageable. But the mail merge system differs from the claimed inventions in several important ways.

55. While the mail merge process was sufficient for basic marketing purposes, it created challenges for generating and keeping track of the various promotions and failed to offer valuable analytics for improving future marketing campaigns. As the marketers increasingly encountered potential customers online, the number of potential promotions could reach into the thousands. Individually creating each promotion was time consuming and resource intensive. Further, marketers could not use the simple mail merge process of combining text or graphics to create highly personalized promotions. Therefore, marketers had to settle for sending very similar promotions to large groups of targets. Not only would this hurt the relevancy of the promotion to each target, it was also possible that the information would be outdated by the time the promotion had been created and delivered.

56. Finding the appropriate promotions, organizing them, and getting those promotions to the right customers presented another problem. If marketers sent a promotion to small target groups, it was difficult to track the effectiveness of the promotion over a meaningful number of potential customers. If marketers sent a promotion to large target groups, it was difficult to create highly personalized promotions. Therefore, a need arose to create promotions efficiently, while grouping related promotions together so they could then be provided to a larger number of customers.

57. As illustrated below, promotions in the prior art were distributed by first being generated by a user, after which the promotion was sent to a customer or customers deemed to be

part of the relevant customer base for each respective promotion. In this one-way process of distributing promotions, information was only received from the consumers after the promotions were already sent.



58. The inventors of the ’904 patent addressed these needs using a new method of creating and distributing promotions that utilized a bottom-up strategy, in contrast to the top-down style of the prior art. This invention leveraged unconventional promotion templates that could dynamically create individual promotions and individual promotion lists. Using the claimed promotion templates, the inventors were able to create collections of promotion instances and promotion versions. These collections, called promotion lists, could be distributed to customers and used, for example, as individualized promotion campaigns. To achieve this result, the inventors designed promotion templates that could repeatedly produce other promotion templates, promotion instances, or promotion versions based upon specific parameters determined by the user

of the marketing system. Users could more easily store, manipulate, and distribute the promotions by creating a promotion list populated by relevant promotions, generated through the use of one or more promotion templates.

59. Promotion templates are able to create replicable promotions because they may include both preassigned attributes, which will define the resulting promotion and are likely to be used across templates, and custom attributes, which may be unique to a specific template or group of templates. The latter can be implemented using parameterized fields for which users can change the values. For example, if a user wants to generate promotions for specific flights, the attribute fields "FavoriteTrips.From" and "FavoriteTrips.To" could be populated with the values "Boston" and "New York," respectively, for a customer interested in traveling between those two cities. In this way a user can now generate countless promotion instances or versions that advertise the price of trips from Boston to New York for different dates and different price-points all produced by the same template. If another customer often travels between Atlanta to San Diego, this same template could generate promotions to advertise flights on this route to that specific customer. Thus, a single flights-specific template can be repeatedly used in different scenarios. This made it possible for the first time to create a massive promotion database, which could be easily queried and sent to potential customers.

60. Further, the innovative methods of the '904 patent allowed those promotions to be further individualized in specific promotion lists responsive to the user's search query. Following from the previous example, a customer who is traveling from Boston to New York might be shown a promotion list that includes promotions for hotels in New York, promotions for activities in New York, as well as promotions for flights from Boston to New York, all created from different promotion templates.

61. The creation of promotion instances from a promotion template is only one of the inventive aspects of the claimed invention. The '904 patent also drastically changed how the promotions that had been created were then ***distributed***. For example, the inventors claimed an algorithm comprising a series of steps that allows for flexibility ***after*** promotion instances have been generated. Those steps addressed the need for finding and delivering appropriate and relevant promotions from a large number of promotion instances that may have been generated from promotion templates. The inventors of the '904 patent also recognized that the same target customer may need to receive multiple promotion instances. By leveraging information about a target recipient, such as using a search query that the recipient itself had generated, a collection of highly relevant promotion instances could be delivered to increase the effectiveness of the marketing campaign.

62. ***First***, to offer a customized high-level "filtering" of the promotion instances which were previously generated by a promotion template, the inventors conceived of a system that received "a search query that includes one or more attributes of a promotion instance." '904 patent at 24:54–55. For instance, a user could submit a search query utilizing Boolean operators to limit the results to exactly what that user was looking for. *Id*. at 16:66–17:12 ("The 'AND' is an example of using a search term that is a Boolean operator to cause the process to include both 'rkennedy' and 'Email' as search criteria 374."). By leveraging these highly specific attributes in the search query, the invention enabled searching for promotion instances that would reflect the interest of the target recipient and in response, return a list of highly relevant promotion instances.

63. ***Second***, once the search query is received, the inventions include "searching one or more data repositories for promotion instances having attributes corresponding to the attributes specified in the search query[.]" *Id*. at claim 1. This search identified promotion instances relevant

to the target recipient by searching for and, in a later step, returning a list of promotion instances that have similar attributes to the search query. Because promotion instances are being searched for and narrowed based on a user query, as opposed to being sent out across an entire field of potential targets, the potential customers receive more tailored promotions and marketers get more accurate results and feedback.

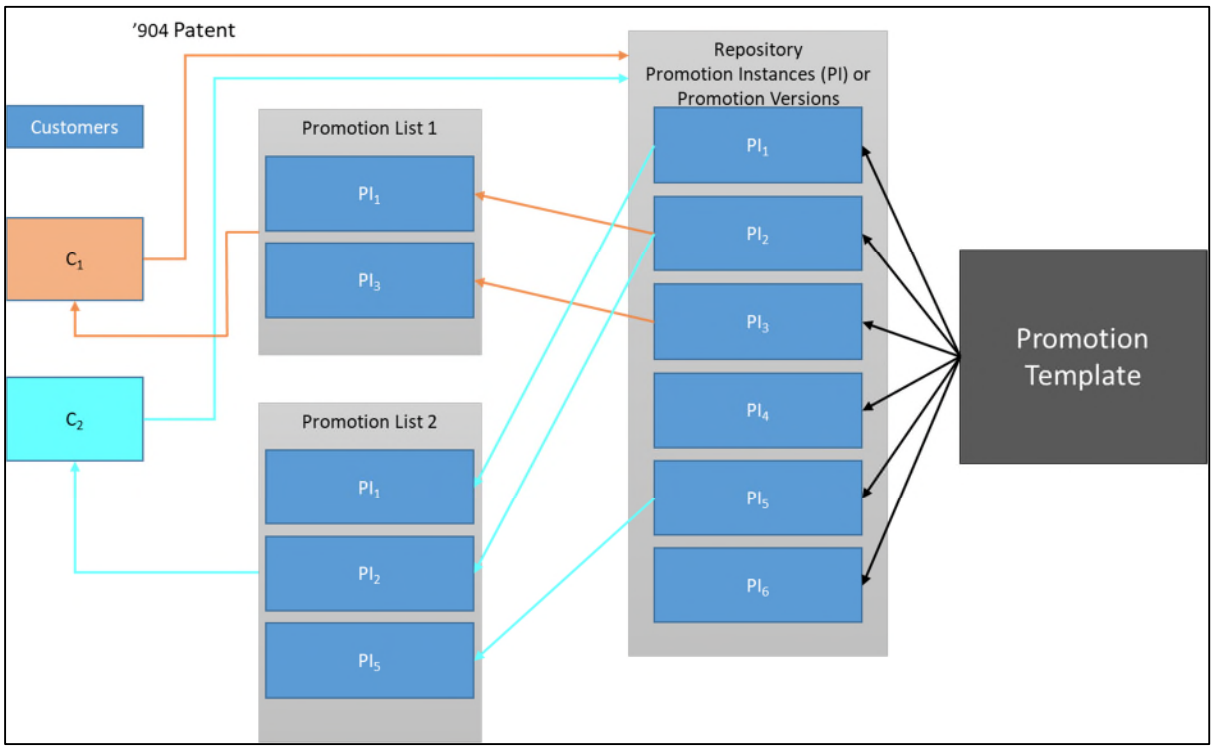
64. ***Third***, the inventors of the '904 patent further recognized that additional "filtering," such as filtering out promotion instances that a user may not want to view or that are outdated, can be carried out to select an even more relevant collection of promotion instances for delivery to the target recipient. Specifically, the '904 patent teaches "receiving, by the one or more computers, a selection of one or more promotion instances, from the returned list, to be included in the promotion list[.]" *Id*. at claim 1. In other words, the inventors contemplated refining the list of promotion instances matching the query to even more finely tailor the promotion instances delivered to the target audience. *Id*. at 17:20–39 ("For example, suppose the user wishes to query all promotion instances for gold credit cards, but only wants the promotion instance for the gold credit card with the lowest interest rate. Thus, if the user sorts 378 results of promotion instances for gold credit cards in ascending order by interest rate, and limits 380 the results to the first hit, then the user can find, the promotion instance for a gold credit card with the lowest interest rate."); *see also id*., Fig. 18. This tailoring of promotion instances was a drastic departure from the prior art "wait and see" approach. Rather than sending the same promotion to everyone in a target group and waiting to analyze feedback on that promotion, promotions could be targeted based upon the user's search query, even before the promotions have been distributed.

65. ***Fourth***, the patented inventions taught assigning this tailored set of promotion instances to a "promotion list," which is a collection of one of more promotion instances that may

be delivered to the desired target recipient. *Id*. at 16:17–20 ("A promotion list is a collection of one or more promotion instances and can be used where ever individual promotion instances are used[.]"). By utilizing promotion lists instead of sending out a singular promotion, the '904 patent allowed for tailored collections of promotions to be sent to targets. This not only increased the analytical possibilities by providing the ability to analyze each promotion in a collection, but it also increased the possible number of relevant promotions that could be presented to a target at one time.

66. ***Fifth***, the inventors conceived of promotion codes that could track target responses, offering insight previously unavailable to marketers. By tracking each promotion instance with a promotion code, the marketer could determine which specific promotion created a response from the target, regardless of how many promotions that target received, and could therefore understand which promotions were most effective. Promotion codes allowed marketing campaigns to be more effective by enabling marketers to push the use of the most effective promotions. The subsequent promotion lists could then be comprised of only the most efficient promotion instances. This process could iteratively run throughout the promotion management campaign, constantly creating promotion lists for targets with the most efficient and relevant promotions. The patented invention thus enabled marketers to receive feedback and analyze data while campaigns are running so they can better allocate resources and redirect the campaign if needed. This added flexibility and allowed campaigns to be more agile, all while saving money and company resources and further allowed for automation of some of the analytics for increased efficiency and accuracy. These improvements are made possible through the use of promotion templates generating promotion instances and the utilization of promotion codes.

67. All these improvements over the prior art allowed for a more efficient and effective method of the creation and subsequent distribution of promotions. Compared to the prior art figure above, the figure below illustrates at a high level how the ability to generate a large repository of promotion instances combines with other inventive aspects of the '904 patent to timely deliver relevant promotion instances. As discussed, these promotion instances can be assigned to promotion lists to distribute the most relevant promotions in a more efficient way possible to the targets. The inventors were thus able to generate a dynamic promotion list that could be updated, without user intervention, to reflect any changes in promotion instances by using a query that dynamically returned promotion instances that matched the query. By reversing the direction of the previously one-way analysis of marketing campaigns, the '904 patent greatly benefitted marketers and targets alike by allowing for massive improvements in promotion distribution.



68. Before this suit, Zillow Group, Inc. and Zillow, Inc. (collectively, "Zillow") unsuccessfully attempted to challenge the '904 patent in an *inter partes* review. *Zillow Group,*

Inc. v. IBM, IPR2020-01656. The Patent Trial and Appeal Board determined that Zillow failed to establish by a preponderance of the evidence that any of the challenged claims are unpatentable. IPR2020-01656, Paper 33, 36–37 (PTAB Mar. 3, 2022).

G. IBM Invented Methods For Reducing Communication Delays by Using a Dual-MVC Approach

69. The inventors of the '719 patent developed the patented technologies as part of IBM's efforts to improve the performance of world wide web (e.g., Internet or Intranet) applications by, among other things, reducing network communication delays.

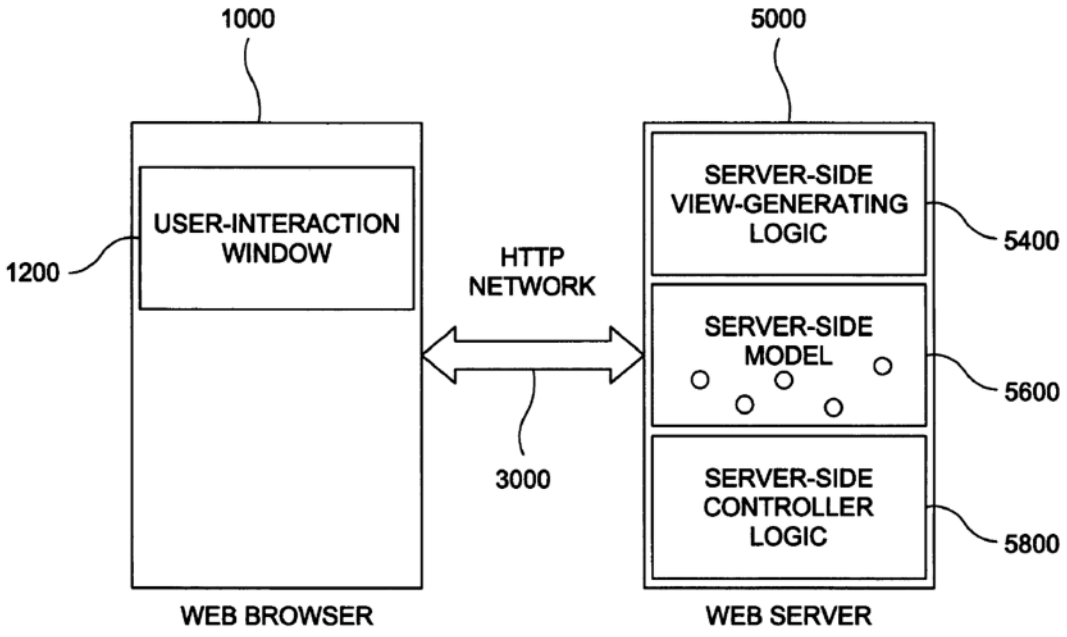
70. Typically, World Wide Web "applications allow users to access and update data on remote servers." '719 patent at 1:17-18. In that configuration, a remote server would contain the master application data while the client (e.g., a user's device) displays views of this data. *Id.* at 1:17–20. Conventional architectures for executing applications included "fat-client" and "thin-client architectures." *Id*. at 1:24–2:14.

71. Historical architectures involved clients consisting of "dumb" terminals connected to servers that executed applications, such that very little processing occurred on the client side. In contrast to architectures comprising dumb terminals, fat-client architectures moved some of the application processing to client-side hardware. Fat-client applications can be described in terms of a Model-View-Controller ("MVC") architecture. The Model contains the data, rules, and algorithms affecting the data. The View is a screen or window representation of a subset of the model that the application chooses to display. The Controller is the logic that processes user requests. The Controller causes the Model to be changed and/or the View to be refreshed. Fat-client applications may maintain a Model and Controller on the server but not the View or View Generating Logic ("VGL"). The View and VGL are maintained by the fat-client. *Id*. at 1:24–51.

72. Fat-client applications provided improved response time over historical applications by, among other things, eliminating round-trips to the server. But the distribution and maintenance of the client software and databases were problematic. For example, users tended to customize their client systems, making it difficult to develop client-side software that worked properly on all systems. It was also difficult to update all the client machines in the field. *Id.* at 1:51–59.

73. As the World Wide Web became more popular, thin-client architectures emerged for executing applications. As illustrated below, in this architecture, most of the application logic executes on the server while browser display logic executes inside the client-side web browser software.

FIG. 2 PRIOR ART

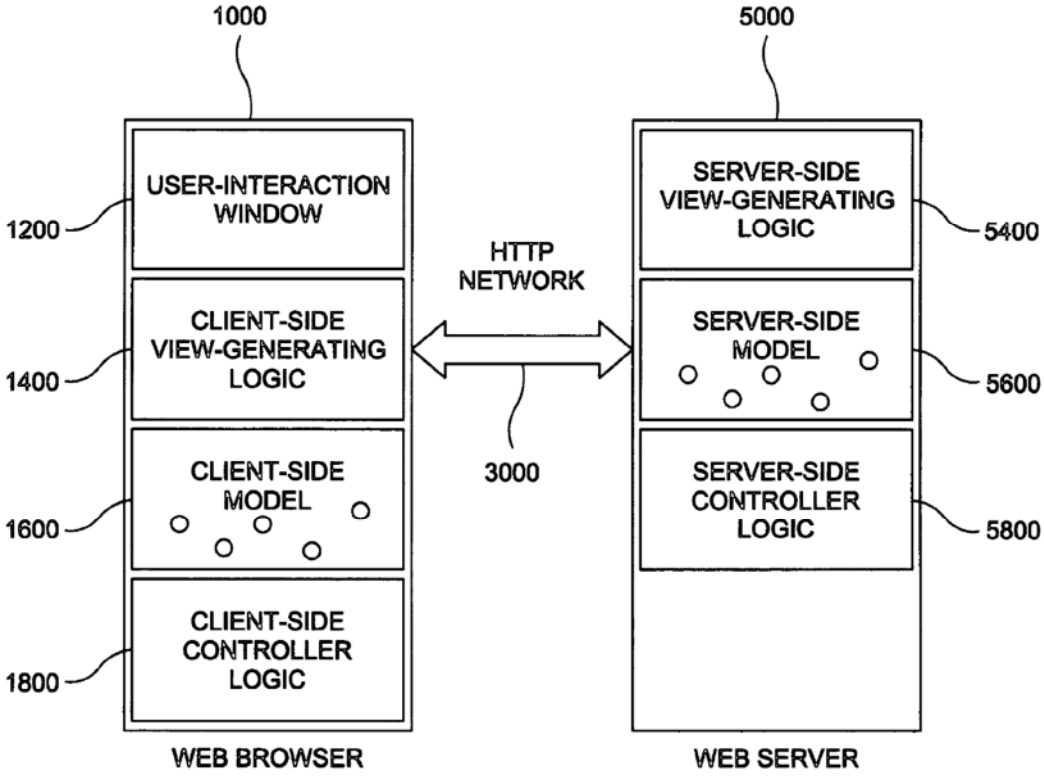


Id., Fig. 2; *see also id.* at 5:7–12.

74. In the thin-client architecture, the web browser is the client and it displays a View. The application's VGL, Model, and Controller reside on the server. When the user interacts with the View, the remote server is notified to update the View and/or Model. As a result, thin-client applications can suffer from reduced performance from network communication delays during server interactions. *Id.* at 2:6–31.

75. The inventors of the '719 patent sought to solve problems resulting from fat-client and thin-client architectures when executing Internet applications. As illustrated below, they developed a dual-MVC approach such that a subset of the application's MVC resides on the client and the full MVC resides on the server.

FIG. 3



Id., Fig. 3; *see also id.* at 1:33–35, 1:39–49, 5:13–26.

76. In the dual-MVC architecture, the server includes server-side VGL, server-side Model data, and server-side Controller logic. The client (or web browser) includes client-side VGL, client-side Model data, and client-side Controller logic. *Id*. at 5:13–26.

77. The methods and systems of dual-MVC architecture developed by the inventors solved the prior art problems. For example, the dual-MVC architecture improves performance by, among other things, reducing the number of required interactions between client and server. The reduction in server interactions improves response time. In addition, the dual-MVC architecture eases development and maintenance efforts; for example, no application installation or persistence on the client is required. *Id*. at 2:39–4:8.

H. Zynga Became A Major Social Games Company By Using IBM's Patented Inventions.

78. Zynga is a leading developer and provider of social games played by millions of people each day. Its website, www.zynga.com, lists over 90 games available to play through a browser or mobile applications. Zynga touts that its games have been downloaded more than four billion times on mobile. Zynga's games are largely free-to-play; Zynga generates substantial portions of their revenue through the sale of in-game virtual items and through advertising services. Zynga's subsidiary, Chartboost, is a leading mobile advertising and monetization platform that allows developers to optimize their programmatic advertising. Since its launch in 2007, Zynga has grown rapidly and now has billions of dollars of revenue per year.

79. Defendants' success relies on the misappropriation of IBM technology and the inventions of the Patents-In-Suit. Zynga's games, accessible through Zynga's websites, including at least www.zynga.com and www.zyngagames.com, and through Zynga's mobile applications, including at least mobile applications running on Apple iOS and Google Android operating systems, use the technology claimed by the Patents-In-Suit to provide features to its users and to

its developers within Zynga's games, including advertisements. Defendants' advertising products, including the Chartboost platform and Chartboost's software development kit (SDK), also use the technology claimed by the Patents-In-Suit to provide optimized advertising. Accordingly, IBM's technology is a key driver of Zynga's success.

80. For nearly eight years, IBM has tried to negotiate a license with Defendants.

81. In June 2014, IBM notified Zynga that it was practicing several IBM patents, including the '849 and '346 patents. IBM asked to meet with Zynga to negotiate a resolution to Zynga's infringement. Zynga initially responded that it sought to resolve the patent matter as part of a larger technology-based arrangement between IBM and Zynga. But after 18 months of discussions, Zynga revealed that it was not interested in moving forward with a business resolution of its patent infringement and openly admitted that litigation would be the only remaining path. In December 2015, IBM again notified Zynga that it infringed the '849 and '346 patents and that IBM remained open to a business resolution.

82. In 2020, IBM informed Zynga that IBM's patents, including those infringed by Zynga, were the subject of several high-profile settlements and an $82.5 million jury verdict against Groupon. IBM again requested that Zynga discuss a business resolution to its infringement. In January 2020, IBM specifically identified how Zynga's *CSR Racing 2* game practiced the '346 patent. And in March 2020, IBM identified how Zynga's *Game of Thrones Slots Casino* Android app practiced the '849 patent. IBM repeatedly requested a meeting between the two parties to review Zynga's infringement, the extent of damages owed, and a possible resolution.

83. Over the intervening months, Zynga consistently refused to schedule any meeting to discuss a resolution, claiming it needed more time to review IBM's materials. Finally, at the

end of April 2020, Zynga provided a response, but one that contained only meritless excuses for its continued infringement of IBM's patents. In May 2020, IBM told Zynga that its response contained inaccuracies and again requested a meeting between the parties to discuss the merits of IBM's positions. Additionally, IBM notified Zynga in May 2020 that it discovered Zynga's infringement of additional patents, including that Zynga's *Farmville 2: Country Escape* game practiced the '719 patent and that its *Words with Friends 2* game practiced the '346 patent.

84. After Zynga reviewed IBM's latest materials, IBM and Zynga met in July and August 2020 over videoconference, where IBM walked Zynga through its infringement of multiple IBM patents, including the '849 patent, the '346 patent, and the '719 patent. IBM continued to correspond by letter and email, explaining its infringement positions in detail and requesting meetings to review Zynga's responses. Yet Zynga dragged its feet by partially responding to IBM's letters and refusing to meet for weeks at a time.

85. IBM and Zynga met again in April 2021 to discuss a license to IBM's patents. Unfortunately, that meeting did not lead to a resolution of Zynga's infringement. IBM reminded Zynga in June 2021 that its continued use of IBM's patents without a license constitutes willful infringement.

86. IBM also attempted to negotiate a license with Chartboost. In 2021, IBM twice contacted Chartboost, Inc. about its infringement of IBM's patents. On June 16, 2021, IBM notified Chartboost that it infringed the '849 patent through the Chartboost SDK. In that communication, IBM told Chartboost that it preferred a business resolution to settle this matter. Then, on July 21, 2021, IBM notified Chartboost that it also infringed the '904 patent through its Cross-Promotion Campaign interface. IBM told Chartboost that it was ready to discuss the detailed evidence of Chartboost's infringement and a possible resolution of these issues. After

months-long delay with no reply, Chartboost finally followed up in August 2021, only to say that because Zynga had now acquired Chartboost, Zynga would handle all discussions with IBM regarding Chartboost and its infringing activities. But Zynga never resolved Chartboost's continued unlicensed use of IBM's patents. Instead, Chartboost has continued its infringement, leaving IBM with no other option but to bring this lawsuit.

87. Since 2014, IBM has repeatedly attempted to engage with Defendants Zynga and Chartboost to find a business solution to resolve these disputes. During this process, Defendants have repeatedly refused to engage in any meaningful discussions about taking a license to end Zynga and Chartboost's infringement of IBM's patents. Instead, Defendants have offered excuses and delays, while unlawfully reaping the benefits of IBM's innovations. Companies, like Defendants, that rely on IBM technology should pay their fair share in a license. Therefore, IBM is left with no other option but to bring a lawsuit for patent infringement.

COUNT ONE

ZYNGA'S INFRINGEMENT OF THE '849 PATENT

88. IBM incorporates by reference paragraphs 1–87.

89. 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.

90. In violation of 35 U.S.C. § 271(a), Zynga has 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 games (including *Games of Thrones Slot Casino*), its websites (including www.zynga.com and www.zyngagames.com), its mobile applications (including the Zynga's mobile applications for mobile devices running on, for example, the Apple iOS and Google Android operating system), and its SDKs. Alternatively, Zynga has 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, Zynga has 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. Zynga's infringement is continuing.

91. For example, Zynga directly infringes at least claim 1 of the '849 patent through the *Game of Thrones Slots Casino* game, including through its mobile application for Android, 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 smartphones and tablets of Zynga's users) at which respective users can request applications (such as the *Games of Thrones Slots Casino* applications), from the network, that include interactive services, the respective reception systems including a monitor (such as a mobile screen of a Zynga user's 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 the *Games of Thrones Slots Casino* applications) so that they may be presented, through the network, at a first portion of one or more screens of display; and

c. structuring advertising (such as "Claim Now" special 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 in which the special offers are presented) of one or more screens of display concurrently with applications (such as the Games of Thrones Slots Casino applications),

wherein structuring the advertising includes configuring the advertising as objects (such as objects comprising advertising image data stored in the png file format) that include advertising data and;

d. selectively storing (such as by using caching parameters and/or code) advertising objects at a store (such as the app cache) established at the reception system. Specifically, as shown below, Game of Thrones Slots Casino pre-fetches advertising objects such that they are retrieved before the user has required any page in connection with which they are to appear.



92. Alternatively, to the extent the "structuring" step is performed by a third party (in addition to and/or separate from Zynga's performance), such as a mobile operating system, that performance is attributable to Zynga at least because Zynga has an agency or contractual relationship with said third party, or Zynga directs or controls the performance of said third party. For example, Zynga directs or controls the performance of the "structuring" steps by mobile operating systems because Zynga, for example, establishes the manner or timing of the performance by, for example, designing and generating the computer code (such as HTML, Java,

JavaScript, JSON, ActionScript, Objective-C, and Swift), which comprise Zynga's mobile applications. That computer code contains instructions that direct the mobile operating system to structure the Zynga mobile applications in a particular manner. As another example, Zynga directs or controls the performance of the "structuring" steps by mobile operating systems because Zynga profits from such performance by, for example, increasing use and user interactions with in-game offers for sale by designing its applications in a user-friendly manner. Zynga has the right to stop or limit infringement by, for example, redesigning the computer code of the Zynga mobile applications to function in a non-infringing manner.

93. Alternatively, to the extent that the "selectively storing" step is performed by a third party (in addition to and/or separate from Zynga's performance), that performance is attributable to Zynga at least because Zynga has an agency or contractual relationship with said third party, or Zynga directs or controls the performance of said third party. For example, Zynga directs or controls the performance of the "selectively storing" step by mobile operating systems because Zynga, 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. As another example, Zynga directs or controls the performance of the "selectively storing" step by mobile operating systems because Zynga profits from such performance by, for example, increasing use and user interactions with in-game offers for sale through reduced latency. Zynga has the right to stop or limit infringement by, for example, determining that image and other data should not be cached.

94. Alternatively, to the extent that the "selectively storing" step is performed by a third party (in addition to and/or separate from Zynga's performance), such as a Content Delivery Network ("CDN") or other server, that performance is attributable to Zynga at least because Zynga

has an agency or contractual relationship with said third party, or Zynga directs or controls the performance of said third party. For example, Zynga directs or controls the performance of the "selectively storing" step by any CDNs because Zynga, 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. As another example, Zynga directs or controls the performance of the "selectively storing" step by mobile operating systems because Zynga profits from the performance by, for example, increasing use and user interactions with in-game offers for sale through reduced latency. Zynga has the right to stop or limit infringement by, for example, determining that image and other data should not be cached.

95. In addition to its *Game of Thrones Slots Casino* game, Zynga practices claim 1 of the '849 patent through other games which include substantially identical functionality, including without limitation, *CSR Racing 2*, *Empire & Puzzles*, *Empires and Allies*, *Farmville 2*, *Farmville 2: Country Escape*, *Farmville 2: Tropic Escape*, *Farmville 3*, *Hit it Rich! Slots*, *Merge Dragons!*, *Wizard of Oz Slots*, *Words with Friends 2*, and *Zynga Poker*.

96. Zynga has had knowledge of the '849 patent and its direct and indirect infringement since at least June 26, 2014.

97. Zynga also indirectly infringes one or more claims of the '849 patent through its websites (including www.zynga.com and www.zyngagames.com) and the Zynga mobile applications (including the Zynga 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 Zynga'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 Zynga 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 Zynga's website and the associate mobile applications) perform at least the method of presenting advertising recited by claim 1 of the '849 patent.

98. On information and belief, despite knowledge of the infringement of the '849 patent, Zynga 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.

99. For example, Zynga provides computer code (such as HTML, Java, JavaScript, JSON, ActionScript, Objective-C, Swift, and image files) underlying the Zynga 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.

100. Further, as a part of providing said computer code, Zynga enters into binding contracts with end users and customers to use Zynga'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.

101. Zynga 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 in-game currency and items through Zynga's website and mobile applications. When customers and end users in this judicial district use the accused website and/or mobile applications, Zynga collects information about the customers and end users, their devices, and their interaction with the accused website and the associated mobile applications. Zynga works with service providers and advertising networks to track and manage activities of customers and end users across different websites and devices. Third parties use information collected by Zynga to deliver advertisements to end users and customers based on their use of the accused website and mobile applications. Zynga's business is funded in part through advertising. The applications and website are especially made and/or especially adapted for use in infringing the '849 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 Zynga's website and mobile applications.

102. On information and belief, despite its knowledge of the infringement of the '849 patent, Zynga 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. Zynga has and continues to encourage and instruct customers and end users to use Zynga'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.

103. On information and belief, to the extent Zynga 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.

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

105. The continued infringement by Zynga 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.

106. 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 Zynga is enjoined therefrom by this Court.

COUNT TWO

CHARTBOOST’S INFRINGEMENT OF THE ’849 PATENT

107. IBM incorporates by reference paragraphs 1–106.

108. As stated above, 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.

109. In violation of 35 U.S.C. § 271(a), Chartboost has 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.chartboost.com) and the Chartboost SDK. Alternatively, Chartboost has 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, Chartboost has 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. Chartboost’s infringement is continuing.

110. For example, Chartboost directly infringes at least claim 8 of the ’849 patent through the Chartboost SDK, at least by:

a. presenting advertising from a computer network (such as the Internet), the network including a multiplicity of user reception systems (such as the smartphones and tablets of the end users of Chartboost’s customers services) at which respective users can request applications (such as the mobile applications provided by Chartboost’s customers), that include interactive services provided by the applications, the method comprising the steps of:

b. compiling data concerning the respective users (such as unique user identifiers and user interactions with the applications and advertisements);

c. establishing characterizations for respective users (such as information used for contextual targeting) based on the compiled data; and

d. structuring advertising so that it may be selectively supplied to and retrieved at the reception systems for presentation to the respective users in accordance with the characterizations established for the respective reception system users (such as presenting advertisements that are individualized to particular users by using an internal device ID, Apple IDFA, Google GAID, Android ID, and/or other criteria based on and developed for respective users), wherein structuring advertising includes supplying advertising data to the reception system

and storing (such as by caching ads) a predetermined amount of the advertising data in a store (such as the application cache) established at the respective reception systems.

111. Alternatively, to the extent the "structuring" step is performed by a third party (in addition to and/or separate from Chartboost's performance), that performance is attributable to Chartboost at least because Chartboost has an agency or contractual relationship with said third party, or Chartboost directs or controls the performance of said third party. For example, Chartboost directs or controls the performance of the "structuring" steps by mobile operating systems because Chartboost, for example, establishes the manner or timing of the performance by, for example, designing and generating the computer code (such as HTML, Java, JavaScript, JSON, ActionScript, Objective-C, and Swift), which comprise the Chartboost SDK. That computer code contains instructions that direct the mobile operating system to structure advertising in a particular way. As another example, Chartboost directs or controls the performance of the "structuring" steps by mobile operating systems because Chartboost profits from such performance by, for example, increasing customer use and user interactions by designing its applications in a user-friendly manner. Chartboost has the right to stop or limit infringement by, for example, redesigning the computer code of the Chartboost webpages and mobile applications to function in a non-infringing manner.

112. Alternatively, to the extent that the "storing" step is performed by a third party (in addition to and/or separate from Chartboost's performance), such as a mobile operating system, that performance is attributable to Chartboost at least because Chartboost has an agency or contractual relationship with said third party, or Chartboost directs or controls the performance of said third party. For example, Chartboost directs or controls the performance of the "selectively storing" step by mobile operating systems because Chartboost, for example, conditions receipt of

a benefit, such as reduced latency and targeted ads, 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. As another example, Chartboost directs or controls the performance of the "storing" step by mobile operating systems because Chartboost profits from such performance by, for example, increasing customer use and user interactions through reduced latency and targeted ads. Chartboost has the right to stop or limit infringement by, for example, determining that image and other data should not be cached.

113. Chartboost has had knowledge of the '849 patent and its direct and indirect infringement since at least June 16, 2021.

114. Chartboost also indirectly infringes one or more claims of the '849 patent through its websites (including www.chartboost.com) and the Chartboost SDK. On information and belief, in certain circumstances, client devices and software (e.g., devices and software used by end users and customers of Chartboost'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 Chartboost does not perform the method steps, in certain circumstances, client devices and software (e.g., devices and software used by end users and Chartboost's customers) perform at least the method of presenting advertising recited by claim 8 of the '849 patent.

115. On information and belief, despite knowledge of the infringement of the '849 patent, Chartboost 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.

116. For example, Chartboost provides computer code (such HTML, Java, JavaScript, JSON, ActionScript, Objective-C, Swift, and image files) underlying the Chartboost 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.

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

118. Chartboost 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 advertisement services through Chartboost's website and mobile applications. When customers and end users in this judicial district use the accused website and/or mobile applications, Chartboost collects information about the customers and end users, their devices, and their interaction with the accused website and the associated mobile applications. Chartboost works with service providers and advertising networks to track and manage activities of customers and end users across different websites and devices. Third parties use information collected by Chartboost to deliver advertisements to end users and customers based on their use of the accused website and mobile applications. The applications and website are especially made

and/or especially adapted for use in infringing the ’849 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 Chartboost’s website and mobile applications.

119. On information and belief, despite its knowledge of the infringement of the ’849 patent, Chartboost 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. Chartboost has and continues to encourage and instruct customers and end users to use Chartboost’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.

120. On information and belief, to the extent Chartboost 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.

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

122. The continued infringement by Chartboost 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.

123. 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 Chartboost is enjoined therefrom by this Court.

COUNT THREE

ZYNGA'S INFRINGEMENT OF THE '346 PATENT

124. IBM incorporates by reference paragraphs 1–123.

125. 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.

126. In violation of 35 U.S.C. § 271(a), Zynga has 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 games (including *CSR Racing 2* and *Words with Friends 2*), its websites (including www.zynga.com and www.zyngagames.com) and its mobile applications (including the Zynga applications for mobile devices running on, for example, the Apple iOS and Google Android operating systems). Zynga's infringement is continuing.

127. For example, Zynga directly infringes at least claim 1 of the '346 patent through the *CSR Racing 2* game, including through the mobile applications for Android at least by:

a. managing user authentication (such as verifying the identity of a gaming user) within a distributed data processing system (such as a computer network), wherein a first system (such as Facebook and its network) and a second system (such as Zynga and its network) interact within a federated computing environment (such as a computer network; for example, the Internet, including Facebook and Zynga) and support single-sign-on operations (such as "Login with Facebook" operations) in order to provide access to protected resources (such as a connected

user account to access bonus virtual currency), 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 "Login with Facebook") 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 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 a Facebook user name and email address);

d. creating a user account (such as a connected *CSR Racing 2* 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 bonus virtual currency), wherein the created user account supports single-sign-on operations (such as future Facebook single-sign-on operations) between the first system and the second system on behalf of the user.

128. As a further example, Zynga directly infringes at least claim 1 of the '346 patent through the *Words with Friends 2* game, including through the mobile applications for Android at least by:

a. managing user authentication (such as verifying the identity of a gaming user) within a distributed data processing system (such as a computer network), wherein a first system (such as Facebook and its network) and a second system (such as Zynga and its network) interact within a federated computing environment (such as a computer network; for example, the Internet, including Facebook and Zynga) and support single-sign-on operations (such as "Log in with Facebook" operations) in order to provide access to protected resources (such as access to the

user's *Words with Friends* account), 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 "Log in with Facebook") 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 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 a Facebook user name, friends list, and email address);

d. creating a user account (such as a connected *Words with Friends* 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 access to the *Words with Friends* account), wherein the created user account supports single-sign-on operations (such as future Facebook single-sign-on operations) between the first system and the second system on behalf of the user.

129. Alternatively, to the extent the "triggering" step is performed by a third party (in addition to and/or separate from Zynga's performance), such as a user, browser, or mobile operating system, or identity provider, that performance is attributable to Zynga at least because Zynga has an agency or contractual relationship with said third party, or Zynga controls or directs the performance of said third party. For example, Zynga controls or directs the performance of the "triggering" step by users, browsers, and mobile operating systems because Zynga, for example, conditions receipt of a benefit, such as access to certain applications on Zynga'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. As another example, Zynga controls or directs the performance of the "triggering" step by users, browsers, and mobile operating systems because Zynga profits from the performance by, for example, increasing the number of signed-in users accessing Zynga's website and mobile applications. Zynga has the right to stop or limit infringement, by, for example, not enabling the use of single-sign-on operations.

130. In addition to its *CSR Racing 2* and *Words with Friends 2* games, Zynga practices claim 1 of the '346 patent through other games which include substantially identical functionality, including without limitation, *Empire & Puzzles*, *Empires and Allies*, *Farmville 2*, *Farmville 2: Country Escape*, *Farmville 2: Tropic Escape*, *Games of Thrones Slots Casino*, *Hit it Rich! Slots*, *Merge Dragons!*, *Wizard of Oz Slots*, and *Zynga Poker*.

131. Zynga has had knowledge of the '346 patent and its alleged direct and indirect infringement since at least June 26, 2014.

132. Zynga also indirectly infringes one or more claims of the '346 patent through its websites (including www.zynga.com and zyngagames.com) and its mobile applications (including the Zynga 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 Zynga'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 Zynga 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 Zynga'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.

133. On information and belief, despite knowledge of the infringement of the ’346 patent, Zynga 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.

134. For example, Zynga provides computer code (such as HTML, Java, JavaScript, JSON, ActionScript, Objective-C, Swift, and image files) underlying the Zynga 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 Zynga’s computer code responses is for the claimed subject matter involving formatting and serving web content as described in the ’346 patent.

135. Further, as a part of providing said computer code, Zynga enters into binding contracts with end users and customers to use Zynga’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.

136. Zynga 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 in-game currency and items through Zynga’s website and mobile applications. When customers and end users in this judicial district use the accused website and/or mobile applications, Zynga collects information about the customers and end users, their devices,

and their interaction with the accused website and the associated mobile applications. Zynga works with service providers and advertising networks to track and manage activities of customers and end users across different websites and devices. Third parties use information collected by Zynga to deliver advertisements to end users and customers based on their use of the accused website and mobile applications. Zynga's business is funded in part through advertising. The applications and website are especially made and/or especially adapted for use in infringing the '346 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 Zynga's website and mobile applications.

137. On information and belief, despite its knowledge of the infringement of the '346 patent, Zynga 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. Zynga has and continues to encourage and instruct customers and end users to use Zynga'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.

138. On information and belief, to the extent Zynga 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.

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

140. The continued infringement by Zynga 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.

141. 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 Zynga is enjoined therefrom by this Court.

COUNT FOUR

CHARTBOOST’S INFRINGEMENT OF THE ’904 PATENT

142. IBM incorporates by reference paragraphs 1–141.

143. IBM is the owner of all right, title and interest in the ’904 patent. The ’904 patent was duly and properly issued by the USPTO on Nov. 20, 2012. The ’904 patent was duly assigned to IBM. A copy of the ’904 patent is attached hereto as Exhibit C.

144. In violation of 35 U.S.C. § 271(a), Chartboost has directly infringed one or more of the claims of the ’904 patent by having made, designed, offered for sale, sold, provided, used, maintained, and/or supported its websites (including www.chartboost.com) and the Chartboost SDK. Chartboost’s infringement is continuing.

145. For example, Chartboost’s Cross-Promotion Campaign interface infringes at least claim 1 of the ’904 patent at least by:

a. producing, by one or more computers, a promotion list (such as advertisements to be displayed in mobile applications) for a promotion management campaign (such as a Cross-Promotion Campaign) by:

b. generating, by one or more computers, a promotion instance from a promotion template (such as generating an advertisement in the format of a "video interstitial");

c. receiving, by one or more computers executing marketing campaign software, a search query (such as advertisement requests) that includes one or more attributes of a promotion instance (such as named locations);

d. searching one or more data repositories for promotion instances having attributes corresponding to the attributes specified in the search query (such as searching for advertisements with a location corresponding to the named location in the query);

e. returning a list including one or more promotion instances having the attributes corresponding to the attributes specified in the search query (such as returning advertisements with a location corresponding to the named location in the query);

f. receiving, by the one or more computers, a selection of one or more promotion instances, from the returned list, to be included in the promotion list (such as receiving a selection of advertisements, from among all of the previously returned advertisements, which meet a specified priority policy for a specified named location);

g. assigning the selected promotion instances to the promotions list (such as including advertisements in a highest priority advertisements list); and

h. storing the promotion list in an electronic medium.

146. Alternatively, to the extent that any step of claim 1 of the '904 patent, including the "receiving" step, is performed by a third party (in addition to and/or separate from Chartboost's performance), such as a user, browser, or mobile operating system, that performance is attributable to Chartboost at least because Chartboost has an agency and/or contractual relationship with said third party and Chartboost controls and/or directs the performance of said third party. For example,

Chartboost controls and/or directs the performance of the "receiving" step by users, browsers, and mobile operating systems because Chartboost, for example, conditions receipt of a benefit, such as improved quality of advertisement management, on the performance of the claimed steps, and establishes the manner or timing of the performance by, for example, determining which advertisements will be returned to the user. As another example, Chartboost controls and/or directs the performance of the "receiving" step by users, browsers, and mobile operating systems because Chartboost profits from the performance by, for example, increasing use and user interactions from improved advertisement management, and Chartboost has the right to stop or limit infringement, by, for example, using a different method to return advertisements to a user.

147. Alternatively, to the extent any step of claim 1 of the '904 patent, including the "receiving" step, is performed by a third party (in addition to and/or separate from Chartboost's performance), such as a Content Delivery Network ("CDN") or other server that performance is attributable to Chartboost at least because Chartboost has an agency and/or contractual relationship with said third party and Chartboost controls and/or directs the performance of said third party. For example, Chartboost controls and/or directs the performance of the "receiving" step by CDNs because Chartboost, 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 advertisements will be returned to the user. As another example, Chartboost controls and/or directs the performance of the "receiving" step by CDNs because Chartboost profits from the performance by, for example, increasing use and user interactions from improved advertisement management, and Chartboost has the right to stop or limit infringement, by, for example, using a different method to return advertisements to a user.

148. Chartboost has had knowledge of the ’904 patent and its alleged direct and indirect infringement since July 21, 2021.

149. Chartboost also indirectly infringes one or more claims of the ’904 patent through the Chartboost websites (including www.chartboost.com) and the Chartboost SDK. On information and belief, in certain circumstances, client devices and software (e.g., devices and software used by end users and customers of Chartboost’s website and the associated mobile applications) directly infringe the ’904 patent through the use of the website and mobile applications. In particular, to the extent Chartboost does not perform the method steps, in certain circumstances, client devices and software (e.g., devices and software used by end users and customers of Chartboost’s website and the associated mobile applications) perform at least the method of producing a promotion list recited by claim 1 of the ’904 patent.

150. On information and belief, despite knowledge of the infringement of the ’904 patent, Chartboost 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 ’904 patent by at least end users and consumers, as described in this section.

151. For example, Chartboost provide computer code underlying the Chartboost website and mobile applications (such as HTML, Java, JavaScript, JSON, ActionScript, Objective-C, Swift, and image files) to customers and end users for use in infringing the ’904 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 ’904 patent and is not a staple article or commodity of commerce suitable for substantial non-infringing use. The only substantial use of

Chartboost's computer code responses is for the claimed subject matter involving returning a promotion list as described in the '904 patent.

152. Further, on information and belief, as a part of providing said computer code, Chartboost enters into binding contracts with end users and customers to use Chartboost's website and mobile applications, including in an infringing manner including by binding the users to a terms of use for the accused website and mobile applications.

153. On information and belief, Chartboost receives valuable consideration from customers and end users located in this judicial district, including information provided by customers and end users, and/or information automatically collected from customers and end users. When customers and end users in this judicial district use the accused website and/or mobile applications, Chartboost collects information about the customers and end users, their devices, and their interaction with the accused website and the associated mobile applications. Chartboost works with service providers and advertising networks to track and manage activities of customers and end users across different websites and devices. Third parties use information collected by Chartboost to deliver advertisements to end users and customers based on their use of the accused website and mobile applications. The applications and website are especially made and/or especially adapted for use in infringing the '904 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 Chartboost's website and mobile applications.

154. On information and belief, despite their knowledge of the infringement of the '904 patent, Chartboost has intended and continues to intend to induce patent infringement by third parties, including at least the direct infringement by end users and customer, as described in this

section. Chartboost has and continues to encourage and instruct customers and end users to use Chartboost's website and the associated mobile applications in a manner that infringes the '904 patent by advertising the website and mobile applications, providing customer support, and designing their website and mobile applications in such a way that the use of the website and mobile applications by an end user or customer infringes the '904 patent.

155. On information and belief, to the extent Chartboost was not aware that it was encouraging its customers and end users to infringe the '904 patent, its lack of knowledge was based on being willfully blind to the possibility that its acts would cause infringement.

156. IBM has been damaged by the infringement of its '904 patent by Chartboost and will continue to be damaged by such infringement. IBM is entitled to recover from Chartboost the damages sustained by IBM as a result of Chartboost's wrongful acts.

157. The continued infringement by Chartboost of the '904 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.

158. 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 Chartboost is enjoined therefrom by this Court.

COUNT FIVE

ZYNGA'S INFRINGEMENT OF THE '719 PATENT

159. IBM incorporates by reference paragraphs 1–158.

160. IBM is the owner of all right, title and interest in the '719 patent. The '719 patent was duly and properly issued by the USPTO on April 20, 2010. The '719 patent was duly assigned to IBM. A copy of the '719 patent is attached hereto as Exhibit D.

161. In violation of 35 U.S.C. § 271(a), Zynga has directly infringed one or more of the claims of the ’719 patent by having made, designed, offered for sale, sold, provided, used, maintained, and/or supported its games (including *Farmville 2: Country Escape*), its websites (including www.zynga.com and www.zyngagames.com) and its mobile applications (including the Zynga applications for mobile devices running on, for example, the Apple iOS and Google Android operating systems). Alternatively, Zynga has contributed to the infringement of the claims of the ’719 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 ’719 patent by end users and consumers, as described in this section. Alternatively, Zynga has induced others, including end users and customers, to infringe one or more of the claims of the ’719 patent in violation of 35 U.S.C. § 271(b), as described below. Zynga’s infringement is continuing.

162. For example, Zynga directly infringes at least claim 1 of the ’719 patent through the *Farmville 2: Country Escape* game, including through the mobile applications for Android at least by:

a. configuring the server to store a model associated with the application (such as the game stored in the cloud) and to execute view-generating and controller logic associated with the application (such as when the game is available to be played by a user that is online (i.e., connected to the cloud via the Internet));

b. configuring the client to store at least a subset of the model associated with the application (such as the game stored on a user’s device) and to execute at least a subset of the view-generating and controller logic associated with the application (such as when the game is available to be played by a user that is offline (i.e., not connected to the cloud via the Internet));

c. wherein one or more portions of the applications are performed at the client without the client having to interact with the server (such as when the game is available to be played when a user is offline), and further wherein the client and the server both locally maintain at least a portion of the model and execute the view-generating and controller logic associated therewith (as demonstrated by when a user is playing offline, she can view her farm and progress, but when playing online she can also view the farm and progress of another player).

163. Alternatively, to the extent that the "configuring the client" step is performed by a third party (in addition to and/or separate from Zynga's performance), such as a user, browser, or mobile operating system, that performance is attributable to Zynga at least because Zynga has an agency or contractual relationship with said third party, or Zynga directs or controls the performance of said third party. For example, Zynga directs or controls the performance of the "configuring the client" step by user, browsers, and mobile operating systems because Zynga, for example, conditions receipt of a benefit, such as offline access to Zynga's games, on the performance of the claimed steps, and establishes the manner or timing of the performance by, for example, triggering the offline access using its underlying computer code. As another example, Zynga directs or controls the performance of the "configuring the client" step by browsers and mobile operating systems because Zynga profits from such performance by, for example, increasing the number of users and user interactions with Zynga's applications by providing offline access. Zynga has the right to stop or limit infringement by, for example, not enabling offline access.

164. In addition to its *Farmville 2: Country Escape* game, Zynga practices claim 1 of the '719 patent through other games which include substantially identical functionality, including without limitation, *CSR Racing 2*, *Farmville 2: Tropic Escape,* and *Farmville 3*.

165. Zynga has had knowledge of the '719 patent and its direct and indirect infringement since at least May 20, 2020.

166. Zynga also indirectly infringes one or more claims of the '719 patent through its websites (including www.zynga.com and www.zyngagames.com) and its mobile applications (including the Zynga 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 Zynga's websites and the associated mobile applications) directly infringe the '719 patent through the use of the websites and mobile applications. In particular, to the extent Zynga 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 Zynga's websites and the associate mobile applications) perform at least the method of configuring the client to store at least a subset of the model associated with the application and to execute at least a subset of the view-generating and controller logic associated with the application wherein one or more portions of the applications are performed at the client without the client having to interact with the server, and further wherein the client locally maintains at least a portion of the model and executes the view-generating and controller logic associated therewith recited by claim 1 of the '719 patent.

167. On information and belief, despite knowledge of the infringement of the '719 patent, Zynga 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 '719 patent by end users and consumers, as described in this section.

168. For example, Zynga provides computer code (such as HTML, Java, JavaScript, JSON, ActionScript, Objective-C, Swift, and image files) underlying the Zynga websites and mobile applications to customers and end users for use in infringing the '719 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 '719 patent and is not a staple article or commodity of commerce suitable for substantial non-infringing use. The only substantial use of Zynga's computer code is for the claimed subject matter involving reducing interactions between a user and a server in association with an application being accessed by the user at the server as described in the '719 patent.

169. Further, as a part of providing said computer code, Zynga enters into binding contracts with end users and customers to use Zynga's websites 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 websites and mobile applications.

170. Zynga 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 in-game currency and items through Zynga's websites and mobile applications. When customers and end users in this judicial district use the accused websites and/or mobile applications, Zynga collects information about the customers and end users, their devices, and their interaction with the accused websites and the associated mobile applications. Zynga works with service providers and advertising networks to track and manage information and activities of customers and end users across different websites and devices. Third parties use information collected by Zynga to deliver advertisements to end users and customers based on

their use of the accused websites and mobile applications. Zynga's business is funded in part through advertising. The applications and websites are especially made and/or especially adapted for use in infringing the '719 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 Zynga's websites and mobile applications.

171. On information and belief, despite its knowledge of the infringement of the '719 patent, Zynga 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. Zynga has and continues to encourage and instruct customers and end users to use Zynga's websites and the associated mobile applications in a manner that infringes the '719 patent by advertising the websites and mobile applications, providing customer support, and designing its websites and mobile applications in such a way that the use of the websites and mobile applications by an end user or customer infringes the '719 patent.

172. On information and belief, to the extent Zynga was not aware that it was encouraging its customers and end users to infringe the '719 patent, its lack of knowledge was based on being willfully blind to the possibility that its acts would cause infringement.

173. IBM has been damaged by the infringement of its '719 patent by Zynga and will continue to be damaged by such infringement. IBM is entitled to recover from Zynga the damages sustained by IBM as a result of Zynga's wrongful acts.

174. The continued infringement by Zynga of the '719 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.

175. 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 Zynga is enjoined therefrom by this Court.

RELIEF REQUESTED

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

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

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

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

D. That the ’849 patent has been and continues to be infringed by Chartboost;

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

F. An injunction against further infringement of the ’849 patent by Chartboost;

G. That the ’346 patent has been and continues to be infringed by Zynga;

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

I. An injunction against further infringement of the ’346 patent by Zynga;

J. That the ’904 patent has been infringed by Chartboost;

K. That Chartboost’s infringement of the ’904 patent has been and continues to be willful;

L. An injunction against further infringement of the ’904 patent by Chartboost;

M. That the ’719 patent has been and continues to be infringed by Zynga;

N. That Zynga’s infringement of the ’719 patent has been and continues to be willful;

O. An injunction against further infringement of the ’719 patent by Zynga;

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,

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