

**United States Court of Appeals  
for the Federal Circuit**

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**CUSTOMEDIA TECHNOLOGIES, LLC,**  
*Appellant*

v.

**DISH NETWORK CORPORATION, DISH NETWORK  
LLC,**  
*Appellees*

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2018-2239

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Appeal from the United States Patent and Trademark  
Office, Patent Trial and Appeal Board in No. CBM2017-  
00023.

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**CUSTOMEDIA TECHNOLOGIES, LLC,**  
*Appellant*

v.

**DISH NETWORK CORPORATION, DISH NETWORK  
LLC,**  
*Appellees*

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2019-1000

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Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. CBM2017-00032.

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Decided: March 6, 2020

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RAYMOND WILLIAM MORT, III, The Mort Law Firm, PLLC, Austin, TX, argued for appellant.

ELIOT DAMON WILLIAMS, Baker Botts LLP, Palo Alto, CA, argued for appellees. Also represented by GEORGE HOPKINS GUY, III; ALI DHANANI, MICHAEL HAWES, Houston, TX.

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Before PROST, *Chief Judge*, DYK and MOORE, *Circuit Judges*.

MOORE, *Circuit Judge*.

Customedia Technologies, LLC appeals the Patent Trial and Appeal Board's final written decisions holding claims 1–6, 8, 17, and 23 of U.S. Patent No. 8,719,090 and claims 1–4, 6–7, 16–19, 23–24, 26–28, 32–36, and 41 of U.S. Patent No. 9,053,494 ineligible under 35 U.S.C. § 101 and finding claims 1 and 5 of the '090 patent unpatentable under 35 U.S.C. § 102. Because the claims are ineligible under § 101, we affirm the Board's determinations. We do not reach the Board's § 102 findings.

#### BACKGROUND

The '090 and '494 patents, which share a specification, disclose comprehensive data management and processing systems. '090 Patent at 3:3–7, 17–21. According to the specification, these systems comprise a remote Account-Transaction Server (ATS) and a local host Data

Management System and Audio/Video Processor Recorder-player (VPR/DMS), e.g., a cable set-top box. *Id.* at 4:15–19, 21:44–49. Broadcasters and other content providers transmit advertising data via the ATS to a local VPR/DMS. *Id.* at 31:1–6. The advertising data may then be selectively recorded in programmable storage sections in the VPR/DMS according to a user’s preferences. *Id.* at 31:3–6, 32:7–21. These storage sections may be “reserved, rented, leased or purchased from end user[s], content providers, broadcasters, cable/satellite distributor, or other data communications companies administering the data products and services.” *Id.* at 31:44–49, 60–64. For example, a cable distributor may provide customers with a cable set-top box with built-in storage sections that may be leased or sold to advertisers. *Id.* at 31:64–32:4. Claim 1 of the ’090 patent recites:

1. A data delivery system for providing automatic delivery of multimedia data products from one or more multimedia data product providers, the system comprising:

a remote account transaction server for providing multimedia data products to an end user, at least one of the multimedia data products being specifically identified advertising data; and

a programmable local receiver unit for interfacing with the remote account transaction server to receive one or more of the multimedia data products and for processing and automatically recording the multimedia data products, said programmable local receiver unit including at least one individually controlled and reserved advertising data storage section adapted specifically for storing the specifically identified advertising data, said at least one advertising data storage section being monitored and controlled by said remote account transaction server and such that said specifically identified

advertising data is delivered by said remote account transaction server and stored in said at least one individually controlled and reserved advertising data storage section.

'090 patent at Claim 1.

Dish Network Corporation and Dish Network LLC (collectively, DISH) petitioned for review of claims 1–8, 17, and 23 of the '090 patent and claims 1–7, 16–19, 23–28, 32–36, 39, 41, and 43 of the '494 patent pursuant to the Transitional Program for Covered Business Method Patents (CBM review). Leahy-Smith Am. Invents Act, Pub. L. No. 112-29, § 18(a) 125 Stat. 284, 329–31 (2011) (AIA). The Board instituted CBM review in each case and issued final written decisions holding claims 1–8, 17, and 23 of the '090 patent and claims 1–4, 6–7, 16–19, 23–24, 26–28, 32–36, and 41 of the '494 patent ineligible under 35 U.S.C. § 101. In addition to holding the claims ineligible under § 101, the Board found claims 1, 5, and 7 of the '090 patent unpatentable under 35 U.S.C. § 102 and claim 7 of the '090 patent unpatentable under 35 U.S.C. § 112. The Board held that DISH failed to prove that alternatively, claims 1–8, 17, and 23 of the '090 patent are unpatentable under 35 U.S.C. § 103 as obvious over U.S. Patent Nos. 5,774,170 (Hite) and 4,607,346 (Hill). Customedia timely appealed the Board's determinations under §§ 101 and 102.<sup>1</sup> DISH cross-appealed the Board's determinations under §103.<sup>2</sup> We have

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<sup>1</sup> Customedia does not appeal the Board's determination that claim 7 of the '090 patent is ineligible under § 101. Customedia also does not appeal the Board's findings that claim 7 of the '090 patent was unpatentable under §§ 102 and 112.

<sup>2</sup> DISH's cross-appeal was voluntarily dismissed on February 6, 2019. *Customedia Techs., LLC v. DISH Network Corp., DISH Network LLC*, Appeal No. 18-2309, D.I. 4.

jurisdiction under 28 U.S.C. § 1295(a)(4)(A).

#### DISCUSSION

We review the Board’s legal conclusions de novo and its factual findings for substantial evidence. *Samsung Elecs. Co. v. Elm 3DS Innovations, LLC*, 925 F.3d 1373, 1380 (Fed. Cir. 2019). Eligibility under 35 U.S.C. § 101 is a question of law, based on underlying facts. *SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1166 (Fed. Cir. 2018).

Section 101 provides that “[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof,” may obtain a patent. 35 U.S.C. § 101. The Supreme Court has held that “[l]aws of nature, natural phenomena, and abstract ideas are not patent eligible.” *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 573 U.S. 208, 216 (2014) (quoting *Assoc. for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 589 (2013)). We follow the Supreme Court’s two-step framework for determining patent-eligibility under § 101. *Id.* at 217. First, we determine whether the claims are directed to a “patent-ineligible concept,” such as an abstract idea. *Id.* If so, we “consider the elements of each claim both individually and ‘as an ordered combination’ to determine whether the additional elements ‘transform the nature of the claim’ into a patent-eligible application.” *Id.* (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 78–79 (2012)).

#### I. *Alice* Step One

At *Alice* step one, we must determine whether the claims are directed to an abstract idea. *Alice*, 573 U.S. at 217. For example, in *Bilski v. Kappos*, the Supreme Court held ineligible claims directed to the concept of risk hedging, an abstract idea it described as “a fundamental economic practice long prevalent in our system of commerce.” 561 U.S. 593, 611 (2010). And in *Alice*, the Supreme Court made clear that the invocation of a computer does not

necessarily transform an abstract idea into a patent-eligible invention. 573 U.S. at 223. There, the Supreme Court held ineligible claims directed to a method of exchanging financial obligations using a computer system as a third-party intermediary. *Id.* at 218–21. The Court explained that the claims were merely implemented “using some unspecified, generic computer” and did not “purport to improve the functioning of the computer itself.” *Id.* at 225–26. Not infrequently, patentees, like Customedia, latch on to this language from *Alice* and claim that their claims do “improve the functioning of the computer itself.” Here, for instance, Customedia argues that its claims are eligible because they “provide for improvements to the operation and functioning of computer systems.” Appellant’s Br. 71, Nos. 18-2239, -2309. We do not agree. The claims at issue here are directed to the abstract idea of using a computer to deliver targeted advertising to a user, not to an improvement in the functioning of a computer.

Claim 1 of the ’090 patent recites a “data delivery system for providing automatic delivery of . . . specifically identified advertising data.” ’090 patent at Claim 1. The advertising data is received and processed by a “programmable local receiver unit,” which includes at least one “individually controlled and reserved advertising data storage section adapted specifically for storing the specifically identified advertising data.”<sup>3</sup> *Id.* Customedia argues that by

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<sup>3</sup> In its final written decision, the Board stated that the “reserved advertising data storage section” limitation does “not require an advertising data storage section that actively precludes or excludes anything other than the specifically identified advertising data” or “any specific structure, such as separate portions that are allocated to a user or a data supplier.” J.A. 7–8, 48. Customedia challenges this construction on appeal, arguing that the

providing a reserved and dedicated section of storage, the claimed invention improves the data delivery system's ability to store advertising data, transfer data at improved speeds and efficiencies, and prevent system inoperability due to insufficient storage. In short, by dedicating a section of the computer's memory to advertising data, the claimed invention ensures memory is available for at least some advertising data. This does not, however, improve the functionality of the computer itself. Even if we accept Customedia's assertions, the claimed invention merely improves the abstract concept of delivering targeted advertising using a computer only as a tool. This is not what the Supreme Court meant by improving the functioning of the computer itself nor is it consistent with our precedent applying this concept.

In *Enfish, LLC v. Microsoft Corp.*, for example, we held patent eligible claims reciting a self-referential database that improved the way computers stored and retrieved data in memory. 822 F.3d 1327, 1337–39 (Fed. Cir. 2016). We concluded the claims did not invoke a computer merely as a tool, but rather improved the way the computer itself operated and handled data, allowing more efficient launching and adaptation of databases. *Id.* at 1336–37. We therefore held that the “plain focus of the claims is on an improvement to computer functionality itself, not on economic or other tasks for which a computer is used in its ordinary capacity.” *Id.* at 1336. As in *Enfish*, we held

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programmable local receiver unit is structurally configured, via a processor and software, to control and limit access to the advertising data storage section such that it stores only advertising data. Appellant's Br. 13–25, Nos. 18-2239, -2309; Appellant's Reply Br. 6–7, 16–17, No. 18-2239. Because Customedia's proposed construction does not change the eligibility of the claims under § 101, we do not reach the merits of its claim construction arguments.

patent eligible claims in *Visual Memory LLC v. NVIDIA Corp.* that were directed to “an improved computer memory system.” 867 F.3d 1253, 1259–60 (Fed. Cir. 2017). We noted that the claims “focus[ed] on a ‘specific asserted improvement in computer capabilities,’” namely the accommodation of different types of processors without compromising performance, “instead of ‘on a process that qualifies as an abstract idea for which computers are invoked merely as a tool.’” *Id.* (quoting *Enfish*, 822 F.3d at 1336). More recently in *Koninklijke KPN N.V. v. Gemalto M2M GmbH*, we evaluated claims directed to a system for generating check data that enabled the detection of persistent systematic errors that prior art systems could not detect. 942 F.3d 1143, 1151 (Fed. Cir. 2019). In holding the claims patent eligible, we stated that the claimed invention “improve[d] the functioning of the overall technological process of detecting systematic errors in data transmissions.” *Id.* at 1151–52.

To be a patent-eligible improvement to computer functionality, we have required the claims to be directed to an improvement in the functionality of the computer or network platform itself. In *Ancora Techs. Inc. v. HTC America, Inc.*, for example, we held that claims directed to storing a verification structure in computer memory were directed to a non-abstract improvement in computer functionality because they improved computer security. 908 F.3d 1343, 1347–49 (Fed. Cir. 2018). We determined the claims addressed the “vulnerability of license-authorization software to hacking” and were thus “directed to a solution to a computer-functionality problem.” *Id.* at 1349. Likewise, in *Finjan, Inc. v. Blue Coat System, Inc.*, we held that claims to a “behavior-based virus scan” provided greater computer security and were thus directed to a patent-eligible improvement in computer functionality. 879 F.3d 1299, 1304–06 (Fed. Cir. 2018). In *Data Engine Techs. LLC v. Google LLC*, we held patent eligible claims reciting “a specific method for navigating through three-



dimensional electronic spreadsheets” because the claimed invention “improv[ed] computers’ functionality as a tool able to instantly access all parts of complex three-dimensional electronic spreadsheets.” 906 F.3d 999, 1007–08 (Fed. Cir. 2018); *see also Core Wireless Licensing S.A.R.L. v. LG Elecs., Inc.*, 880 F.3d 1356, 1359–63 (Fed. Cir. 2018) (holding patent eligible claims reciting an improved user interface for electronic devices that improved the efficiency of the electronic device, particularly those with small screens”). And in *SRI Int’l, Inc. v. Cisco Sys. Inc.*, we held patent eligible claims directed to an improved method of network security “using network monitors to detect suspicious network activity . . . generating reports of that suspicious activity, and integrating those reports using hierarchical monitors.” 930 F.3d 1295, 1303 (Fed. Cir. 2019). We concluded that the “focus of the claims was on the specific asserted improvement in computer capabilities,” namely “providing a network defense system that monitors network traffic in real-time to automatically detect large-scale attacks.” *Id.* at 1303–04.

We have held that it is not enough, however, to merely improve a fundamental practice or abstract process by invoking a computer merely as a tool. For example, in *Affinity Labs. of Texas, LLC v. DIRECTV, LLC*, we held that claims to a method of providing out-of-region access to regional broadcasts were directed to an abstract idea. 838 F.3d 1253, 1258 (Fed. Cir. 2016). We determined the claims were not a patent-eligible improvement in computer functionality because they simply used cellular telephones “as tools in the aid of a process focused on an abstract idea.” *Id.* at 1262; *see also In re TLI Commc’ns LLC Patent Litig.*, 823 F.3d 607, 611 (Fed. Cir. 2016) (holding ineligible claims reciting concrete physical components merely as “a generic environment in which to carry out the abstract idea of classifying and storing digital images in an organized manner”). Likewise, in *Intellectual Ventures I LLC v. Capital One Bank (USA)*, we held that claims reciting a system for

providing web pages tailored to an individual user were directed to an abstract idea. 792 F.3d 1363, 1369–70 (Fed. Cir. 2015). We held that “claiming the improved speed or efficiency inherent with applying the abstract idea on a computer” was insufficient to render the claims patent eligible as an improvement to computer functionality. *Id.* at 1367, 1370; *see also Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 715–16 (Fed. Cir. 2014) (holding that displaying an advertisement in exchange for access to copyrighted material is an abstract idea). And in *SAP Am., Inc. v. InvestPic, LLC*, we held patent ineligible claims directed to “selecting certain information, analyzing it using mathematical techniques, and reporting or displaying the results of the analysis.” 898 F.3d 1161, 1167–68 (Fed. Cir. 2018). We determined the claims were focused not on a physical-realm improvement to computers as tools but rather an improvement in wholly abstract ideas. *Id.* at 1168.

We have also held that improving a user’s experience while using a computer application is not, without more, sufficient to render the claims directed to an improvement in computer functionality. For example, in *Trading Techs. I*, we held patent ineligible claims directed to a computer-based method for facilitating the placement of a trader’s order. *Trading Techs. Int’l, Inc. v. IBG LLC*, 921 F.3d 1084, 1092–93 (Fed. Cir. 2019) (*Trading Techs. I*). Although the claimed display purportedly “assist[ed] traders in processing information more quickly,” we held that this purported improvement in user experience did not “improve the functioning of the computer, make it operate more efficiently, or solve any technological problem.” *Id.*; *see also Trading Techs. Int’l, Inc. v. IBG LLC*, 921 F.3d 1378, 1381, 1384–85 (Fed. Cir. 2019) (*Trading Techs. II*) (holding that claims “focused on providing information to traders in a way that helps them process information more quickly” did not constitute a patent-eligible improvement to computer functionality).

In sum, “software can make non-abstract improvements to computer technology just as hardware improvements can.” *Enfish*, 822 F.3d at 1335. But to be directed to a patent-eligible improvement to computer functionality, the claims must be directed to an improvement to the functionality of the computer or network platform itself. *See, e.g., id.* 1336–39; *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257–59 (Fed. Cir. 2014). Thus, this inquiry “often turns on whether the claims focus on ‘the specific asserted improvement in computer capabilities . . . or, instead, on a process that qualifies as an “abstract idea” for which computers are invoked merely as a tool.’” *Finjan*, 879 F.3d at 1303 (quoting *Enfish*, 822 F.3d at 1335–36).

Against this background, we agree with the Board that the claims here are not directed to a patent-eligible improvement to computer functionality. The claims of the ’090 and ’494 patents do not enable computers to operate more quickly or efficiently, nor do they solve any technological problem. They merely recite reserving memory to ensure storage space is available for at least some advertising data. The specification is silent as to any specific structural or inventive improvements in computer functionality related to this claimed system. *See, e.g.,* ’090 patent at 30:57–67, 3:47–50. The only improvements identified in the specification are generic speed and efficiency improvements inherent in applying the use of a computer to any task. Therefore, the claimed invention is at most an improvement to the abstract concept of targeted advertising wherein a computer is merely used as a tool. This is not an improvement in the functioning of the computer itself.

## II. *Alice* Step Two

At *Alice* step two, we “consider the elements of each claim both individually and ‘as an ordered combination’ to determine whether the additional elements ‘transform the nature of the claim’ into a patent-eligible application.” *Alice*, 573 U.S. at 218, (quoting *Mayo*, 566 U.S. at 78–79).

Step two “looks more precisely at what the claim elements add” to determine if “they identify an inventive concept in the application of the ineligible matter to which . . . the claim is directed.” *SAP*, 898 F.3d at 1167.

At step two, the Board held that the elements of the claims, considered individually and as an ordered combination, fail to recite an inventive concept. We agree. Aside from the abstract idea of delivering targeted advertising, the claims recite only generic computer components, including a programmable receiver unit, a storage device, a remote server and a processor. *See, e.g.*, ’090 patent at Claim 1. The specification acknowledges that the storage device “may be any storage device for audio/video information known in the art” and the receiver unit may include “any digital or analog signal receiver and/or transmitter capable of accepting a signal transmitting any kind of digital or broadcast information.” *Id.* at 15:4–6, 24:26–34. Such generic and functional hardware is insufficient to render eligible claims directed to an abstract idea. *Alice*, 573 U.S. at 226.

Customedia argues that the claims are eligible under *Alice* step two because the use of a programmable receiver to dedicate a section of storage for storing only “specifically identified advertising data” was innovative over prior art approaches. However, the invocation of “already-available computers that are not themselves plausibly asserted to be an advance . . . amounts to a recitation of what is well-understood, routine, and conventional.” *SAP*, 898 F.3d at 1170. The ’090 and ’494 patent claims’ invocation of a conventional receiver is insufficient to supply the required inventive concept. Thus, we conclude the Board did not err in holding the claims of the ’090 and ’494 patents ineligible under § 101.

#### CONCLUSION

We have considered Customedia’s remaining arguments and find them unpersuasive. For the foregoing

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reasons, we conclude that claims 1–6, 8, 17, and 23 of the '090 patent and claims 1–4, 6–7, 16–19, 23–24, 26–28, 32–36, and 41 of the '494 patent are ineligible under § 101 and therefore affirm the Board's decisions.

**AFFIRMED**