United States Court of Appeals for the Federal Circuit

CHARGEPOINT, INC.,
Plaintiff-Appellant

v.

SEMACONNECT, INC.,
Defendant-Appellee

2018-1739

Appeal from the United States District Court for the District of Maryland in No. 8:17-cv-03717-MJG, Senior Judge Marvin J. Garbis.

Decided: March 28, 2019

STEFFEN NATHANAEL JOHNSON, Winston & Strawn LLP, Washington, DC, argued for plaintiff-appellant. Also represented by ZACHARY BENJAMIN COHEN, CHARLES B. KLEIN, ANDREW CURTIS NICHOLS; JAMES LIN, MICHAEL RUECKHEIM, Menlo Park, CA; DAVID SPENCER BLOCH, San Francisco, CA.

ALAN WHITEHURST, Quinn Emanuel Urquhart & Sullivan, LLP, Washington, DC, argued for defendant-appellee. Also represented by DEEPA ACHARYA, MARISSA RACHEL DUCCA; SEAN S. PAK, OGNJEN ZIVOJNOVIC, San Francisco, CA.

Before PROST, *Chief Judge,* REYNA and TARANTO, *Circuit Judges.*

PROST, *Chief Judge*.

Appellant ChargePoint, Inc. appeals the decision of the U.S. District Court for the District of Maryland, which dismissed ChargePoint's complaint under Federal Rule of Civil Procedure 12(b)(6). The district court held that the eight patent claims asserted by ChargePoint were ineligible for patenting under 35 U.S.C. § 101. We affirm.

I

The technology at issue in this patent infringement case pertains to charging stations for electric vehicles. The battery in an electric vehicle is recharged by connecting the vehicle to an electrical outlet. U.S. Patent No. 8,138,715 col. 1 ll. 20–24 ("the '715 patent"). At the time the patent application was filed, this process "typically require[d] hours and [was] often done overnight or while the electric vehicle [was] parked for a significant time." *Id.* col. 1 ll. 24–26.

Businesses such as restaurants, apartments, and shopping centers have installed electric vehicle charging stations for the convenience of their customers. These site hosts manage their charging stations in different ways. For example, a shopping center may prefer to offer free vehicle charging to its customers to encourage customers to continue shopping. Meanwhile, an apartment complex might limit access to its charging stations to ensure that only tenants can use those stations.

Utility companies have different concerns in mind. Generally, the supply of electricity available from a power grid may vary, and in some cases the grid may lack sufficient electricity to meet demand. *Id.* col. 1 ll. 39–41. During such periods when power supply is low compared to

demand, supply to certain customers or services may be reduced based on a preplanned load prioritization scheme. *Id.* col. 1 ll. 44–47. The idea of reducing electricity consumption during periods of high demand is one form of what is referred to as "demand response." *Id.* col. 1 ll. 43–44. Demand response may also involve increasing demand during periods when demand is low compared to supply, by reducing the cost of electricity. *Id.* col. 1 ll. 47–50.

In addition to pulling electricity from a local electricity grid, electric vehicles may also *supply* electricity to the grid. *Id.* col. 1 ll. 58–61. This is referred to as vehicle-to-grid transfer or V2G. *Id.* Vehicle-to-grid transfer can be helpful during periods of high demand. *Id.* col. 1 ll. 64–66.

ChargePoint contends that its inventors created improved charging stations that address the various needs inherent in electric vehicle charging. This was accomplished by creating *networked* charging stations. According to ChargePoint, this network connectivity allows the stations to be managed from a central location, allows drivers to locate charging stations in advance, and allows all users to interact intelligently with the electricity grid.

ChargePoint alleged in its complaint that it was "the first company to propose *networked* [electric vehicle] charging infrastructure, in the face of widespread industry skepticism, and the first to patent networked [electric vehicle] charging technology." J.A. 83 ¶ 6. It further alleged that the asserted patents "describe a paradigm-shifting concept of how to charge electric vehicles in a dynamic, networked environment—a dramatic departure from the gas station-centric ideas that prevailed before ChargePoint's innovations." J.A. 84 ¶ 9.

According to ChargePoint, its inventions enabled individual charging stations to be networked together to allow site hosts, drivers, and utility companies to communicate in real time to address the needs and preferences of each constituency. For example, the patents describe the ability

to locate available charging stations remotely. *See, e.g.*, '715 patent col. 4 ll. 59–65. The patents also explain that the availability of electricity may be based on power grid data provided by a utility company. *See, e.g.*, *id.* col. 4 ll. 45–58. And the patents suggest that drivers can choose to transfer power from their vehicles to the power grid during periods of high demand. *Id.* col. 4 ll. 54–58. These capabilities are described in the four patents at issue in this appeal.

A

There are four patents at issue in this case: U.S. Patent Nos. 8,138,715; 8,432,131 ("the '131 patent"); 8,450,967 ("the '967 patent"); and 7,956,570 ("the '570 patent"). The patents share the same specification.

These patents generally describe electric vehicle charging stations that are connected to a network. The stations are connected to the local power grid, and electric vehicles connect to the stations by way of an electrical connector. '715 patent col. 5 ll. 38–42.

ChargePoint asserted claims 1 and 2 of the '715 patent in this case. J.A. 98–99 ¶¶ 49–50 (Compl.). These claims recite an apparatus that is controlled by a remote server, where the server controls whether electricity is flowing. Claim 2 adds a component that physically connects the charging station to an electric vehicle and that can activate or deactivate charging at the connection.

As for the '131 patent, ChargePoint asserted claims 1 and 8. J.A. 101–02 ¶¶ 60–61 (Compl.). Claim 1 specifies that the apparatus can modify electricity flow based on demand response communications received from the server.

With respect to the '967 patent, ChargePoint asserted claims 1 and 2. J.A. 104, 107 ¶¶ 71–72 (Compl.). These claims are method claims related to using the network-controlled charging stations. They also incorporate the idea of demand response.

Finally, regarding the '570 patent, ChargePoint asserted claims 31 and 32. J.A. 91, 96 ¶¶ 38–39 (Compl.). These claims describe a network-controlled charging station system.

B

ChargePoint sued SemaConnect for patent infringement in December 2017. Soon after, ChargePoint filed a motion for emergency injunctive relief. The district court denied injunctive relief and ordered expedited briefing on SemaConnect's Rule 12(b)(6) motion based on § 101. The court granted SemaConnect's motion to dismiss under Rule 12(b)(6) with prejudice, holding each asserted claim ineligible for patenting under § 101. *ChargePoint, Inc. v. SemaConnect, Inc.*, No. 17-3717, 2018 WL 1471685 (D. Md. Mar. 23, 2018).

The district court entered final judgment in favor of SemaConnect on March 23, 2018. ChargePoint timely appealed. We have jurisdiction under 28 U.S.C. § 1295(a)(1).

II

We review a district court's grant of a Rule 12(b)(6) motion under the law of the regional circuit. *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121, 1124 (Fed. Cir. 2018). Applying Fourth Circuit law, we review a district court's dismissal under Rule 12(b)(6) de novo, we assume the truth of the complaint's factual allegations, and we draw all reasonable inferences in favor of the plaintiff. *Semenova v. Md. Transit Admin.*, 845 F.3d 564, 567 (4th Cir. 2017) (citing *Belmora LLC v. Bayer Consumer Care AG*, 819 F.3d 697, 702 (4th Cir. 2016)).[1]

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[1] In its "Standard of Review" section of its brief, ChargePoint cites Fourth Circuit case law suggesting that motions under Rule 12(b)(6) generally cannot reach the merits of affirmative defenses unless all facts necessary to

Subject matter eligibility under § 101 may be determined at the Rule 12(b)(6) stage of a case. *Aatrix Software*, 882 F.3d at 1125. Dismissal at this early stage, however, is appropriate "only when there are no factual allegations that, taken as true, prevent resolving the eligibility question as a matter of law." *Id.*

Section 101 of the Patent Act delineates the subject matter eligible for patent protection. Under that section, "[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 therefor, subject to the conditions and requirements of this title." 35 U.S.C. § 101. This provision, however, contains longstanding judicial exceptions, which provide that laws of nature, natural phenomena, and abstract ideas are not eligible for patenting. *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208, 216 (2014).

In analyzing whether the claims are patent eligible, we employ the two-step analysis articulated in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66 (2012), and further delineated in *Alice*. "First, we determine whether the claims at issue are directed to one of those patent-ineligible concepts." *Alice*, 573 U.S. at 217. If the claims are directed to a patent ineligible concept, we begin the "search for an 'inventive concept'—*i.e.*, an element or combination of elements that is 'sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.'" *Id.*

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that defense clearly appear on the face of the complaint. Appellant's Br. 22. To the extent ChargePoint intended to make a procedural argument related to this case law, we hold that argument forfeited, as it is not addressed elsewhere in ChargePoint's briefing.

at 217–18 (internal quotation marks omitted) (quoting *Mayo*, 566 U.S. at 72–73).

A

At step one of the *Mayo*/*Alice* inquiry, "[w]e must first determine whether the claims at issue are directed to a patent-ineligible concept." *Id.* at 218. We recognize that "[a]t some level, 'all inventions . . . embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.'" *Id.* at 217 (quoting *Mayo*, 566 U.S. at 71). Thus, at step one, "it is not enough to merely identify a patent-ineligible concept underlying the claim; we must determine whether that patent-ineligible concept is what the claim is 'directed to.'" *Thales Visionix Inc. v. United States*, 850 F.3d 1343, 1349 (Fed. Cir. 2017) (quoting *Rapid Litig. Mgmt. Ltd. v. CellzDirect, Inc.*, 827 F.3d 1042, 1050 (Fed. Cir. 2016)). We have described this step one inquiry "as looking at the 'focus' of the claims." *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016 (quoting *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335–36 (Fed. Cir. 2016)). In this first step, we consider the claims "in their entirety to ascertain whether their character as a whole is directed to excluded subject matter." *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1346 (Fed. Cir. 2015).

Our cases have crafted various tools to analyze whether a claim is "directed to" ineligible subject matter. For example, we have found the specification helpful in illuminating what a claim is "directed to." *See In re TLI Commc'ns LLC Patent Litig.*, 823 F.3d 607, 611–12 (Fed. Cir. 2016); *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1376 (Fed. Cir. 2015); *see also Parker v. Flook*, 437 U.S. 584, 586 (1978) (noting that the patent application provided nothing more than a formula for computing an alarm limit); *cf. United States v. Adams*, 383 U.S. 39, 49 (1966) ("[I]t is fundamental that claims are to be construed in the light of the specifications and both are to be read

with a view to ascertaining the invention."). But while the specification may help illuminate the true focus of a claim, when analyzing patent eligibility, reliance on the specification must always yield to the claim language in identifying that focus. This is because "the concern that drives" the judicial exceptions to patentability is "one of pre-emption," *Alice*, 573 U.S. at 216, and the claim language defines the breadth of each claim, *see Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 336 U.S. 271, 277 (1949) ("[I]t is the claim which measures the grant to the patentee."). Thus, as part of our "directed to" analysis, we also consider whether a claim is truly focused on an abstract idea (or other ineligible matter), whose use the patent law does not authorize anyone to preempt. *See Mayo*, 566 U.S. at 72; *see also Alice*, 573 U.S. at 223 (noting "the pre-emption concern that undergirds our § 101 jurisprudence"); *Ariosa Diagnostics*, 788 F.3d at 1379 ("The Supreme Court has made clear that the principle of preemption is the basis for the judicial exceptions to patentability.").

With these tools in mind, we turn to the claims at issue in this case. We address each claim separately, as the parties have not designated a representative claim.

1

Claims 1 and 2 of the '715 patent are both apparatus claims. They recite:

> 1. An apparatus, comprising:
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> > a control device to turn electric supply on and off to enable and disable charge transfer for electric vehicles;
> >
> > a transceiver to communicate requests for charge transfer with a remote server and receive communications from the remote server via a data control unit that is connected to the remote server through a wide area network; and

> a controller, coupled with the control device and the transceiver, to cause the control device to turn the electric supply on based on communication from the remote server.
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> 2. The apparatus of claim 1, further comprising an electrical coupler to make a connection with an electric vehicle, wherein the control device is to turn electric supply on and off by switching the electric coupler on and off.

'715 patent claims 1–2.

It is clear from the language of claim 1 that the claim *involves* an abstract idea—namely, the abstract idea of communicating requests to a remote server and receiving communications from that server, i.e., communication over a network. But at step one, "it is not enough to merely identify a patent-ineligible concept underlying the claim; we must determine whether that patent-ineligible concept is what the claim is '*directed to*.'" *Thales Visionix*, 850 F.3d at 1349 (emphasis added) (quoting *Rapid Litig. Mgmt.*, 827 F.3d at 1050). We therefore continue our analysis to determine whether the focus of claim 1, as a whole, is the abstract idea. As explained below, we conclude that it is.

While "[t]he § 101 inquiry must focus on the language of the Asserted Claims themselves," *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1149 (Fed. Cir. 2016), the specification may nonetheless be useful in illuminating whether the claims are "directed to" the identified abstract idea. *See In re TLI Commc'ns*, 823 F.3d at 611–12; *Ariosa Diagnostics*, 788 F.3d at 1376. For example, in some cases the "directed to" inquiry may require claim construction, which will often involve consideration of the specification. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005) (en banc) ("[C]laims 'must be read in view of the specification, of which they are a part.'" (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995)).

The "directed to" inquiry may also involve looking to the specification to understand "the problem facing the inventor" and, ultimately, what the patent describes as the invention. *See In re TLI Commc'ns*, 823 F.3d at 612; *Ariosa Diagnostics*, 788 F.3d at 1376 (in the step one analysis, pointing to statements from the specification that supported the conclusion that the natural phenomenon claimed was the key discovery described in the patent). For example, in *In re TLI Communications* we held ineligible a claim to a method for recording and administering digital images using a phone. 823 F.3d at 610. In our step one analysis, we explained that "the problem facing the inventor was not how to combine a camera with a cellular telephone, how to transmit images via a cellular network, or even how to append classification information to that data." *Id.* at 612. Instead, quoting the specification, we explained that "the inventor sought to 'provid[e] for recording, administration and archiving of digital images simply, fast and in such way that the information therefore may be easily tracked.'" *Id.*; *see id.* at 611 (noting that "the specification's emphasis" that the present invention relates to methods for recording, communicating, and administering a digital image "underscores that [the claim] is directed to an abstract concept"). We also pointed to the specification to explain why the tangible components recited in the method claim were merely "conduit[s] for the abstract idea." *Id.* at 612. We reached that conclusion in part because the specification "fail[ed] to provide any technical details for the tangible components, but instead predominately describe[d] the system and methods in purely functional terms." *Id.*; *see id.* at 612–13 (concluding that "the focus of the patentee and of the claims was not on" improved hardware because the specification described the functionality of the hardware "in vague terms without any meaningful limitations").

In this case, ChargePoint has not expressed a need for claim construction, so we need not look to the specification

for that purpose. We do, however, view the specification as useful in understanding "the problem facing the inventor" as well as what the patent describes as the invention. Here, the specification suggests that claim 1 is directed to the abstract idea of communication over a network to interact with a device connected to the network. The problem identified by the patentee, as stated in the specification, was the lack of a communication network that would allow drivers, businesses, and utility companies to interact efficiently with the charging stations. For example, the specification states that "[t]here is a need for a communication network which facilitates finding the recharging facility, controlling the facility, and paying for the electricity consumed." '715 patent col. 1 ll. 35–38. Likewise, it states that "[t]here is a need for an efficient communication network for managing peak load leveling using Demand Response and V2G." *Id.* col. 2 ll. 8–10. Looking to future needs, the specification anticipates that "there will be a need for a system for collection of taxes and consumption information." *Id.* col. 2 ll. 18–20. From these statements, it is clear that the problem perceived by the patentee was a lack of a communication network for these charging stations, which limited the ability to efficiently operate them from a business perspective.

The specification also makes clear—by what it states and what it does not—that the invention of the '715 patent is the idea of *network-controlled* charging stations.[2] The

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[2] At step one, we look to what the specification describes as the invention only to help understand the focus of the claims. We are not analyzing, for example, whether the claimed invention is actually novel. *See Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 715 (Fed. Cir. 2014) ("[A]ny novelty in implementation of the idea is a factor to be considered only in the second step of the *Alice* analysis.").

summary of the invention states: "A system for network-controlled charging of electric vehicles and the network-controlled electrical outlets used in this system are described herein." *Id.* col. 3 ll. 37–39. The specification then goes on to describe a networked system in which, among other things, drivers can determine whether a charging station is available, drivers can pay to charge their vehicles, and utility companies can supply information to charging stations from a demand response system.[3] Notably, however, the specification never suggests that the charging station itself is improved from a technical perspective, or that it would operate differently than it otherwise could. Nor does the specification suggest that the invention involved overcoming some sort of technical difficulty in adding networking capability to the charging stations.

In short, looking at the problem identified in the patent, as well as the way the patent describes the invention, the specification suggests that the invention of the patent is nothing more than the abstract idea of communication over a network for interacting with a device, applied to the context of electric vehicle charging stations. *See Alice*, 573 U.S. at 222 ("[T]he prohibition against patenting abstract ideas cannot be circumvented by attempting to limit the use of [the idea] to a particular technological environment." (alteration in original) (quoting *Bilski v. Kappos*, 561 U.S. 593, 610–11(2010))). Although this is not necessarily

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[3] Although not every *type* of communication that we have discussed as being in the specification (such as communications based on demand response) is mentioned in claim 1, we include these details because they directly correspond to what *is* expressly included in claim 1—communication over a network. These details further illustrate that the invention is the addition of networking capability and the various communication possibilities it brings.

dispositive of the "directed to" inquiry, it strongly suggests that the abstract idea identified in claim 1 may indeed be the focus of that claim.

With these indications from the specification in mind, we return to the claim language itself to consider the extent to which the claim would preempt building blocks of science and technology. *See Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1369 (Fed. Cir. 2015) ("At step one of the *Alice* framework, it is often useful to determine the breadth of the claims in order to determine whether the claims extend to cover a 'fundamental . . . practice long prevalent in our system . . . .'" (quoting *Alice*, 573 U.S. at 219)).[4] We agree with SemaConnect that, based on the claim language, claim 1 would preempt the use of any networked charging stations. *See* Appellee's Br. 47–48. ChargePoint's arguments to the contrary are unconvincing, as ChargePoint merely states that the claim "recites specific, narrowing limitations arranged in a particular manner." Reply Br. 21. We are unpersuaded. The breadth with which this claim is written further indicates that the claim is directed to the abstract idea of communication over a network for device interaction. *See Ariosa Diagnostics*, 788 F.3d at 1379 ("[P]reemption may signal patent ineligible subject matter . . . .").

The breadth of the claim language here illustrates why any reliance on the specification in the § 101 analysis must always yield to the claim language. Ultimately, "[t]he § 101 inquiry must focus on the language of the Asserted Claims

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[4] We have also considered preemption at step two of the analysis. *See BASCOM Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1350 (Fed. Cir. 2016); *see also Alice*, 573 U.S. at 223 (mentioning the underlying concern of preemption in the step two portion of the analysis).

themselves," *Synopsys*, 839 F.3d at 1149, and the specification cannot be used to import details from the specification if those details are not claimed. Even a specification full of technical details about a physical invention may nonetheless conclude with claims that claim nothing more than the broad law or abstract idea underlying the claims, thus preempting all use of that law or idea. This was the case in *O'Reilly v. Morse*, 56 U.S. (15 How.) 62 (1853).[5] In *Morse*, the Court upheld claims related to the details of Samuel Morse's invention of the electromagnetic telegraph, but invalidated a claim for the use of "electromagnetism, however developed for marking or printing intelligible characters, signs, or letters, at any distances." *Id.* at 112. The Court expressed concern that such a broad claim would cover any application of printing at a distance via electromagnetism regardless of whether those applications used the invention in the patent. *Id.* at 113.

A similar scenario arose in *Wyeth v. Stone*, 30 F. Cas. 723 (C.C.D. Mass. 1840) (No. 18,107). There, the patent described the inventor's machine for cutting ice in great detail. But Justice Story, riding circuit, held that one claim effectively "claim[ed] an exclusive title to the art of cutting ice by means of any power, other than human power." *Id.* at 727. He reasoned that "[s]uch a claim is utterly unmaintainable" because "[i]t is a claim for an art or principle in the abstract, and not for any particular method or machinery, by which ice is to be cut." *Id.*

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[5] Although we have referenced *Morse* in other contexts, such as written description, *see Univ. of Rochester v. G.D. Searle & Co.*, 358 F.3d 916, 929 n.9 (Fed. Cir. 2004), *Morse* is also relevant to the § 101 analysis. Indeed, the Supreme Court has discussed *Morse* in many of its § 101 opinions. *Alice*, 573 U.S. at 216; *Mayo*, 566 U.S. at 72, 85; *Flook*, 437 U.S. at 592; *Gottschalk v. Benson*, 409 U.S. 63, 68 (1972).

As we explained in *Interval Licensing LLC v. AOL, Inc.*, in *Morse* and *Wyeth*, each inventor "lost a claim that encompassed all solutions for achieving a desired result" because those claims "were drafted in such a result-oriented way that they amounted to encompassing the 'principle in the abstract' no matter how implemented." 896 F.3d 1335, 1343 (Fed. Cir. 2018). In our view, this is effectively what ChargePoint has done in this case. Even if ChargePoint's specification had provided, for example, a technical explanation of how to enable communication over a network for device interaction (which, as discussed above, it did not), the claim language here would not require those details. Instead, the broad claim language would cover any mechanism for implementing network communication on a charging station, thus preempting the entire industry's ability to use networked charging stations. This confirms that claim 1 is indeed "directed to" the abstract idea of communication over a network to interact with network-attached devices.

We conclude our "directed to" analysis by addressing ChargePoint's argument that the claims asserted are patent eligible because the claimed invention "build[s] a better machine." Appellant's Br. 24, 29. We are not persuaded. Claim 1 indicates that the abstract idea is associated with a physical machine that is quite tangible—an electric vehicle charging station. Claim 2 goes further, explaining that a vehicle may be connected to the apparatus via an electrical coupler. But as the Supreme Court indicated in *Alice*, whether a device is "a tangible system (in § 101 terms, a 'machine')" is not dispositive. *See* 573 U.S. at 224; *In re TLI Commc'ns*, 823 F.3d at 611 ("[N]ot every claim that recites concrete, tangible components escapes the reach of the abstract-idea inquiry."). Resolving the § 101 inquiry based on such an argument "would make the determination of patent eligibility 'depend simply on the draftsman's art.'" *Alice*, 573 U.S. at 224 (quoting *Flook*, 473 U.S. at 593). As discussed above, the claim language

and the specification indicate that the focus of the claim is on the abstract idea of network communication for device interaction.

In short, the inventors here had the good idea to add networking capabilities to existing charging stations to facilitate various business interactions. But that is where they stopped, and that is all they patented. We therefore hold that claim 1 is "directed to" an abstract idea.

As to dependent claim 2, the additional limitation of an "electrical coupler to make a connection with an electric vehicle" does not alter our step one analysis. The character of claim 2, as a whole, remains directed to the abstract idea of communication over a network to interact with a device, applied in the context of charging stations.

2

Claims 1 and 8 of the '131 patent are also apparatus claims. They recite:

1. An apparatus, comprising:

> a control device to control application of charge transfer for an electric vehicle;
>
> a transceiver to communicate with a remote server via a data control unit that is connected to the remote server through a wide area network and receive communications from the remote server, wherein the received communications include communications as part of a demand response system; and
>
> a controller, coupled with the control device and the transceiver, to cause the control device to modify the application of charge transfer based on the communications received as part of the demand response system.

. . .

> 8. The apparatus of claim 1, wherein the communications received as part of the demand response system include power grid load data, and wherein the controller is further to manage charge transfer based on the received power grid load data.

'131 patent claims 1 and 8.

Claim 1 of the '131 patent is almost identical to claim 1 of the '715 patent. The key differences are that the apparatus in claim 1 of the '131 patent does not make requests for charge transfer (it only receives them) and that the electricity supply is modified "based on the communications received as part of the demand response system." '131 patent claim 1. Because of the similarity to claim 1 of the '715 patent, we incorporate our analysis of that claim and add additional comments only as necessary.

ChargePoint contends that claims 1 and 8 of the '131 patent teach "a charging station with improved technical features that enable it to adjust the amount of electricity delivered to cars based on demand-response communications with utilities." Reply Br. 5. To the extent ChargePoint is arguing that modification itself is an improvement, nothing in the specification explains from a technical perspective how that modification occurs. And the fact that the electricity flow is modified *based on demand response principles* does nothing to make this claim directed to something other than the abstract idea. Demand response is itself an abstract concept—a familiar business choice to alter terms of dealing to help match supply and demand. *See* '131 patent col. 1 ll. 45–52 ("Demand Response is a mechanism for reducing consumption of electricity during periods of high demand. . . . Demand Response may also be used to increase demand at times of high electricity production. For example, the cost of electricity may be reduced during periods of low demand."). As we have said before, "[a]dding one abstract idea . . . to another abstract idea . . .

does not render the claim non-abstract." *RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322, 1327 (Fed. Cir. 2017), *cert. denied,* 138 S. Ct. 672 (2018). Moreover, demand response as used in these claims merely refers to the content of the communications received by the charging station. We therefore conclude that claims 1 and 8 are also directed to the abstract idea of communicating over a network.

3

Claims 1 and 2 of the '967 patent are method claims written from the perspective of the server that communicates with the charging stations. The claims recite:

> 1. A method in a server of a network-controlled charging system for electric vehicles, the method comprising:
>
> > receiving a request for charge transfer for an electric vehicle at a network-controlled charge transfer device;
> >
> > determining whether to enable charge transfer;
> >
> > responsive to determining to enable charge transfer, transmitting a communication for the network-controlled charge transfer device that indicates to the network-controlled charge transfer device to enable charge transfer; and
> >
> > transmitting a communication for the network-controlled charge transfer device to modify application of charge transfer as part of a demand response system.
>
> 2. The method of claim 1, wherein determining whether to enable charge transfer includes validating a payment source for the charge transfer.

'967 patent claims 1 and 2.

These claims are similar to those discussed above. With respect to these claims, ChargePoint again focuses its arguments on the ability to modify an electric vehicle charging station's operation based on a demand response business policy. *See* Reply Br. 6. But, as explained above with respect to the '131 patent, the patent never discusses any technical details regarding how to modify electricity flow, and the fact that any modifications are made in response to a demand response policy merely adds one abstract concept to another.

The additional limitation in claim 2 regarding validating a payment source merely provides content for what occurs during determination of whether to enable charge transfer. This does nothing to alter the character of that claim as a whole.

We thus conclude that claims 1 and 2 of the '967 patent are directed to the abstract idea of communicating over a network.

4

Claims 31 and 32 of the '570 patent claim "[a] network-controlled charge transfer system for electric vehicles." The claims recite:

> 31. A network-controlled charge transfer system for electric vehicles comprising:
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> a server;
>
> a data control unit connected to a wide area network for access to said server; and
>
> a charge transfer device, remote from said server and said data control unit, comprising:
>
> an electrical receptacle configured to receive an electrical connector for recharging an electric vehicle;

> an electric power line connecting said receptacle to a local power grid;
>
> a control device on said electric power line, for switching said receptacle on and off;
>
> a current measuring device on said electric power line, for measuring current flowing through said receptacle;
>
> a controller configured to operate said control device and to monitor the output from said current measuring device;
>
> a local area network transceiver connected to said controller, said local area network transceiver being configured to connect said controller to said data control unit; and
>
> a communication device connected to said controller, said communication device being configured to connect said controller to a mobile wireless communication device, for communication between the operator of said electric vehicle and said controller.
>
> 32. A system as in claim 31, wherein said wide area network is the Internet.

'570 patent claims 31 and 32.

Although these claims are in a different form than claim 1 of the '715 patent, we again find our analysis of that claim applicable. ChargePoint contends that the various physical components in claims 31 and 32 show that the claims "do not recite the general concept of remote access or control, but rather a concrete arrangement of components that *enables* users and site hosts to access and control electric-vehicle charging stations." Reply Br. 7. But the specification does not suggest that the inventors' discovery was the particular arrangement of components

claimed. And although ChargePoint accuses SemaConnect of giving "short shrift to improvements like the 'current measuring device' and 'communication device' to connect a 'mobile wireless communication device,'" *see* Reply Br. 7, there is no indication that the invention of the '570 patent was intended to improve those particular components or that the inventors viewed the combination of those components as their invention. The only improvement alleged is use of the concept of network communication to interact with the particular devices. This remains the focus of these two claims, thus making both directed to an abstract idea.

5

In short, while the eight claims on appeal vary in some respects, they are all directed to the abstract idea of communicating over a network for device interaction. Communication over a network for that purpose has been and continues to be a "building block of the modern economy." *See Alice*, 573 U.S. at 220 (characterizing the use of a clearing house in *Bilski* as "a building block of the modern economy"). As with the practice of intermediated settlement in *Bilski*, this "is an 'abstract idea' beyond the scope of § 101," *id.*, and the asserted claims are directed to that abstract idea.

B

At step two of the *Alice* inquiry—the search for an inventive concept—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.* at 217 (quoting *Mayo*, 566 U.S. at 78–79). "[P]atentees who adequately allege their claims contain inventive concepts survive a § 101 eligibility analysis under Rule 12(b)(6)." *Aatrix Software*, 882 F.3d at 1126–27.

Where a claim is directed to an abstract idea, the claim must include "'additional features' to ensure 'that the

[claim] is more than a drafting effort designed to monopolize the [abstract idea]." *Alice*, 573 U.S. at 221 (alteration in original) (quoting *Mayo*, 566 U.S. at 77). These additional features cannot simply be "'well-understood, routine, conventional activit[ies]' previously known to the industry." *Id.* (alteration in original) (quoting *Mayo*, 566 U.S. at 79). Indeed, adding novel or non-routine components is not necessarily enough to survive a § 101 challenge. *See Ultramercial*, 772 F.3d at 715 (disagreeing with the patent owner's argument that "the addition of merely novel or non-routine components to the claimed idea necessarily turns an abstraction into something concrete"). Instead, the inventive concept must be "sufficient to ensure that the patent in practice amounts to significantly more" than a patent on the abstract idea. *See Mayo*, 566 U.S. at 72–73. In other words, "transformation into a patent-eligible application requires 'more than simply stat[ing] the [abstract idea] while adding the words "apply it."'" *Alice*, 573 U.S. at 221 (quoting *Mayo*, 566 U.S. at 72); *see Mayo*, 566 U.S. at 77 (asking whether the claims "add enough").

Whether a claim "supplies an inventive concept that renders a claim 'significantly more' than an abstract idea to which it is directed is a question of law" that may include underlying factual determinations. *BSG Tech LLC v. Buyseasons, Inc.*, 899 F.3d 1281, 1290 (Fed. Cir. 2018). For example, within the overall step two analysis, "whether a claim element or combination of elements is well-understood, routine and conventional to a skilled artisan in the relevant field is a question of fact" that "must be proven by clear and convincing evidence." *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1368 (Fed. Cir. 2018).

Here, ChargePoint argues that it presented sufficient factual allegations to preclude dismissal at the Rule 12(b)(6) stage. Appellant's Br. 56, 58–64. Specifically, ChargePoint argues that its patents represent an unconventional solution to technological problems in the field, and thus contain an inventive concept.

The problems in the art identified by ChargePoint are, generally: the sparse availability of charging stations and the need for more widespread stations; the need for a communication network that facilitates finding an available charging station, controlling the station, and paying for electricity; and the need for real time communication to effectively implement demand response and vehicle-to-grid transfer. *See* Appellant's Br. 59–61 (listing statements from the specification discussing problems in the art).

ChargePoint contends that it solved these problems in an unconventional way through: (a) the ability to turn electric supply on based on communications from a remote server; (b) a "network-controlled" charging system; and (c) a charging station that receives communication from a remote server, including communications made to implement a demand response policy. Appellant's Br. 59. To support the unconventional nature of these alleged improvements, ChargePoint relies on allegations in its complaint, which state that ChargePoint's patents "describe a paradigm-shifting concept of how to charge electric vehicles in a dynamic, networked environment," and that ChargePoint was "the first company to propose *networked* [electric vehicle] charging infrastructure, in the face of widespread industry skepticism, and the first to patent networked [electric vehicle] charging technology." *Id.* at 62 (citing J.A. 83–84 ¶¶ 6, 9).

In essence, the alleged "inventive concept" that solves problems identified in the field is that the charging stations are network-controlled. But network control is the abstract idea itself, and "a claimed invention's use of the ineligible concept to which it is directed cannot supply the inventive concept that renders the invention 'significantly more' than that ineligible concept." *BSG Tech*, 899 F.3d at 1290.

In addition to the general arguments above, ChargePoint highlights certain aspects of each asserted claim. We address each argument in turn. First, with respect to

claims 1 and 2 of the '715 patent, as well as claims 31 and 32 of the '570 patent, ChargePoint points to the ability to operate charging stations remotely as solving a problem in the field. Reply Br. 27–28. This, again, merely mirrors the abstract idea itself and thus cannot supply an inventive concept. *See BSG Tech*, 899 F.3d at 1290.

Turning to claims 1 and 8 of the '131 patent, as well as claims 1 and 2 of the '967 patent, ChargePoint contends that these claims capture technical improvements related to demand response. Reply Br. 27. ChargePoint disputes the district court's conclusion that "the combination of connecting generic networking equipment to a charging device to carry out a demand response plan already existed and was well-understood, routine, and conventional." J.A. 63. But, as the district court pointed out, the "Background of the Invention" section of the specification demonstrates that demand response has been in use in other consumer services, such as with air conditioning and lighting, which may be reduced during periods of high demand. *See* '131 patent col. 1 ll. 41–52. Indeed, demand response is simply a familiar business choice of terms of dealing to help match supply and demand. This cannot supply an inventive concept in this case.

Despite ChargePoint's reliance on *BASCOM*, the claims in this case do not improve the technology the way the claims in *BASCOM* did. There, the patent improved prior art content filtering solutions by making them more dynamic, thus using software to improve the performance of the computer system itself. *BASCOM*, 827 F.3d at 1351. Here, the claims do nothing to improve how charging stations function; instead, the claims merely add generic networking capabilities to those charging stations and say "apply it." *See Alice*, 573 U.S. at 223. This is simply an "abstract-idea-based solution implemented with generic technical components in a conventional way." *BASCOM*, 827 F.3d at 1351.

In short, we agree with SemaConnect that the only possible inventive concept in the eight asserted claims is the abstract idea itself. ChargePoint, of course, disagrees with this characterization, arguing that its patents claim "charging stations *enabled* to use networks, not the network connectivity itself." Reply Br. 29. But the specification gives no indication that the patented invention involved how to add network connectivity to these charging stations in an unconventional way. From the claims and the specification, it is clear that network communication is the only possible inventive concept. Because this is the abstract idea itself, this cannot supply the inventive concept at step two. The claims are therefore ineligible.

C

ChargePoint briefly contends that the district court erred by refusing to consider ChargePoint's submitted declarations, "[d]espite its ability to do so under Rule 12(d)." Appellant's Br. 21. In ChargePoint's view, these declarations would have aided the district court in analyzing step two. But Appellant makes no argument that the district court was *required* to consider such materials under these circumstances, and we see no error in the court's decision to decide the motion in the form it was presented.

D

ChargePoint also contends that the district court erred by dismissing the complaint with prejudice, thus precluding ChargePoint from amending its complaint to add additional factual allegations. Appellant's Br. 64–65. As part of its argument, ChargePoint notes that the district court did not address whether amending the complaint would be futile.

In response, SemaConnect points out that ChargePoint never requested that its complaint be dismissed without prejudice, nor did ChargePoint seek leave from the district court to amend its complaint. Appellee's Br. 62–63.

Indeed, ChargePoint did not even suggest the possibility of amendment below. This appeal is the first time ChargePoint has raised this issue. *See id.* ChargePoint does not dispute this, but merely states that the district court dismissed the case with prejudice and entered judgment on the same day it issued the § 101 decision, leaving ChargePoint without an opportunity to seek leave to amend. Reply Br. 33.

Under Fourth Circuit law, there is no requirement that a district court provide a plaintiff with a definitive ruling on a Rule 12(b)(6) motion before the court dismisses a complaint with prejudice. *Adbul-Mumit v. Alexandria Hyundai, LLC*, 896 F.3d 278, 291–92 (4th Cir.) (rejecting the plaintiffs' argument that plaintiffs had no reason to amend their complaint until the court provided a "definitive ruling" that would notify plaintiffs of deficiencies in their complaints), *cert. denied*, 138 S. Ct. 607 (2018); *id.* (explaining that "[c]ategorically requiring a district court to *first* provide a 'definitive ruling' before dismissal with prejudice impedes a district court's inherent power to manage its docket" and "would be at odds with our general rule that the nature of dismissal is a matter for the discretion of the district court"). We see no error in the district court's decision to dismiss the complaint with prejudice and enter judgment on the same day.

ChargePoint's concern that the district court made no finding that amendment would be futile is also unavailing in these circumstances. *See United States ex rel. Carson v. Manor Care, Inc.*, 851 F.3d 293, 305 n.6 (4th Cir. 2017). In *Carson*, the plaintiff included a cursory request for amendment in its response to a motion to dismiss, and the district court did not explicitly address that request when it granted the motion to dismiss with prejudice. *Id.* The Fourth Circuit first explained that the district court did not abuse its discretion in denying the request because the plaintiff "did not properly file a motion to amend under Federal Rule of Civil Procedure 15 or submit a proposed

amended complaint." *Id.* (citing *Drager v. PLIVA USA, Inc.*, 741 F.3d 470, 474 (4th Cir. 2014), for the proposition that "[r]egardless of the merits of the desired amendment, a district court does not abuse its discretion by declining to grant a motion that was never properly made"). The court further explained that while, ordinarily, a denial of leave to amend without any accompanying rationale is an abuse of discretion (because it is a failure to exercise discretion at all), where the plaintiff "made no proffer to the district court, nor to this Court, of how [its] complaint could be amended" to survive dismissal, "any amendment would be futile." *Id.* Even more clearly than in *Carson*, ChargePoint did not file a motion to amend before the district court. *Cf. Domino Sugar Corp. v. Sugar Workers Local Union 392 of United Food & Commercial Workers Int'l Union*, 10 F.3d 1064, 1068 n.1 (4th Cir. 1993) ("[T]he [plaintiff] contends that the district court erred by not providing the [plaintiff] leave to amend its complaint in response to the [defendant's] motion to dismiss. This argument fails, however, because the [plaintiff] never requested leave to amend."). Moreover, in our view, ChargePoint has not identified any alleged facts that could be pleaded that would cure the deficiencies in its complaint. Therefore, ChargePoint has failed to provide any assurance that amendment would be anything other than futile.

In its Reply, ChargePoint clarifies that it is not asking this court to grant leave to amend or to require the district court to do so; instead, ChargePoint states that it seeks only an order vacating the dismissal with prejudice so that it can file a motion to amend. Reply Br. 32. But, at least under Fourth Circuit law, a plaintiff should first seek this relief in the district court. Under Fourth Circuit precedent, "[p]laintiffs whose actions are dismissed are free to subsequently move for leave to amend pursuant to Federal Rule of Civil Procedure 15(b) even if the dismissal is with prejudice." *Adbul-Mumit*, 896 F.3d at 293. And while "a motion to amend filed after a judgment of dismissal has been

entered cannot be considered until the judgment is vacated," *Calvary Christian Ctr. v. City of Fredericksburg*, 710 F.3d 536, 539 (4th Cir. 2013), a post-judgment motion for leave to amend may be accompanied by a motion under Rule 59(e) or Rule 60(b), *see Laber v. Harvey*, 438 F.3d 404, 427 (4th Cir. 2006) (en banc) ("[T]he district court may not grant the post-judgment motion [to amend] unless the judgment is vacated pursuant to Rule 59(e) or Fed. R. Civ. P. 60(b).").[6]

In sum, applying Fourth Circuit law, we see no basis to vacate the district court's dismissal with prejudice where ChargePoint never sought leave to amend pre-judgment, where ChargePoint never filed a proposed amended complaint pre-judgment, where ChargePoint could have sought leave to amend post-judgment by concurrently filing a motion under Rule 59(e) or 60(b), and where ChargePoint has not put forth facts that would be sufficient to withstand a § 101 challenge.

III

For the foregoing reasons, we affirm the district court's determination that claims 1 and 2 of the '715 patent, claims 1 and 8 of the '131 patent, claims 31 and 32 of the '570 patent, and claims 1 and 2 of the '967 patent are ineligible under § 101.

AFFIRMED

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[6] "To determine whether vacatur is warranted, however, the court need not concern itself with either of those rules' legal standards. The court need only ask whether the amendment should be granted, just as it would on a prejudgment motion to amend pursuant to [Rule] 15(a)." *Katyle v. Penn Nat'l Gaming, Inc.*, 637 F.3d 462, 471 (4th Cir. 2011).