



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/029,959	09/18/2013	Richard B. BETTES	END920060150US5	7132
46583	7590	03/21/2019	EXAMINER	
Roberts Mlotkowski Safran Cole & Calderon, P.C. Intellectual Property Department P.O. Box 10064 MCLEAN, VA 22102-8064			CHEN, GEORGE YUNG CHIEH	
			ART UNIT	PAPER NUMBER
			3628	
			NOTIFICATION DATE	DELIVERY MODE
			03/21/2019	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@rmc2.com  
lgallaugh@rmc2.com  
secretaries@rmc2.com

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

*Ex parte* RICHARD B. BETTES, STEPHEN E. JAFFE,  
BRET R. SANDEFUR, and MATTHEW B. TREVATHAN

---

Appeal 2017-010512<sup>1</sup>  
Application 14/029,959<sup>2</sup>  
Technology Center 3600

---

Before MICHAEL C. ASTORINO, NINA L. MEDLOCK, and  
PHILIP J. HOFFMANN, *Administrative Patent Judges*.

MEDLOCK, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner’s final rejection of claims 1–20. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

---

<sup>1</sup> Our decision references Appellants’ Appeal Brief (“App. Br.,” filed January 30, 2017) and Reply Brief (“Reply Br.,” filed August 4, 2017), and the Examiner’s Answer (“Ans.,” mailed June 6, 2017) and Final Office Action (“Final Act.,” mailed August 26, 2016).

<sup>2</sup> Appellants identify International Business Machines Corporation as the real party in interest. App. Br. 2.

## CLAIMED INVENTION

Appellants' claimed invention "generally relates to a system and method of using product profiling for the efficient transportation and upselling of product" and, more particularly, "to a system and method of using product profiling to maximize transportation capacity while meeting other business objectives, e.g., profitability" (Spec. ¶ 1).

Claims 1, 11, and 16, reproduced below with bracketed notations added, are the independent claims on appeal and representative of the claimed subject matter:

1. A system comprising:

[(a)] a CPU, a computer readable memory and a computer readable storage media;

[(b)] program instructions to retrieve product profiles from a management system;

[(c)] program instructions to retrieve product information from volatile memory of the management system, the product information being associated with the product profiles;

[(d)] program instructions to provide a break point to eliminate a skewed proportion for products being shipped using the management system, wherein the break point maximizes profitability for the products being shipped; and

[(e)] program instructions to perform cubing operations using the management system for products associated with the product information, wherein the program instructions are stored on the computer readable storage media for execution by the CPU via the computer readable memory.

11. A method implemented in a computer infrastructure having computer executable code tangibly embodied on a computer readable storage medium having programming instructions operable to:

[(a)] retrieving product profiles from a management system;

[(b)] retrieving product information from volatile memory in the management system, the product information being associated with the product profiles and including historical product information;

[(c)] determining, using the management system, that a past product exists based on the historical product information;

[(d)] providing, using the management system, the past product for shipment when the past product exists; and

[(e)] performing, using the management system, cubing operations for the past products and additional products associated with the product information.

16. A computer program product comprising a computer readable hardware storage device having readable program code stored on the computer readable hardware storage device comprising:

[(a)] program code to retrieve product profiles from a management system;

[(b)] program code to retrieve product information from volatile memory in the management system, the product information being associated with the product profiles and including historical product information;

[(c)] program code to determine that a past product exists based on the historical product information;

[(d)] program code to provide the past product for shipment when the past product exists; and

[(e)] program code to perform cubing operations for the past products and additional products associated with the product information.

### REJECTION<sup>3</sup>

Claims 1–20 are rejected under 35 U.S.C. § 101 as directed to a judicial exception without significantly more.

---

<sup>3</sup> The Examiner has withdrawn the rejection under 35 U.S.C. § 112(b) and the double patenting rejection. *See* Ans. 2.

## ANALYSIS

Under 35 U.S.C. § 101, an invention is patent-eligible if it claims a “new and useful process, machine, manufacture, or composition of matter.” 35 U.S.C. § 101. The Supreme Court, however, has long interpreted § 101 to include an implicit exception: “[l]aws of nature, natural phenomena, and abstract ideas” are not patentable. *Alice Corp. v. CLS Bank Int’l*, 573 U.S. 208, 216 (2014).

The Supreme Court, in *Alice*, reiterated the two-step framework previously set forth in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66 (2012), “for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts.” *Alice Corp.*, 573 U.S. at 217. The first step in that analysis is to “determine whether the claims at issue are directed to one of those patent-ineligible concepts.” *Id.* If the claims are not directed to a patent-ineligible concept, e.g., an abstract idea, the inquiry ends. Otherwise, the inquiry proceeds to the second step where the elements of the claims are considered “individually and ‘as an ordered combination’” to determine whether there are additional elements that “‘transform the nature of the claim’ into a patent-eligible application.” *Id.* (quoting *Mayo*, 566 U.S. at 79, 78).

The Court acknowledged in *Mayo*, that “all inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.” *Mayo*, 566 U.S. at 71. Therefore, the Federal Circuit has instructed that claims are to be considered in their entirety to determine “whether their character as a whole is directed to excluded subject matter.” *McRO, Inc. v. Bandai Namco Games Am., Inc.*, 837 F.3d 1299, 1312

(Fed. Cir. 2016) (quoting *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1346 (Fed. Cir. 2015)).

In rejecting the pending claims under 35 U.S.C. § 101, the Examiner determined that the claims are directed to “load scheduling,” and involve a process (i.e., retrieving product profiles/information, calculating a break point, and performing a cubing operation) similar to concepts that the courts have held abstract (Final Act. 2–3). The Examiner also determined that the claims do not include additional elements that are sufficient to amount to significantly more than the abstract idea itself (*id.* at 3–4).

*Independent Claim 1 and Dependent Claims 4, 7, and 10*

We are not persuaded, as an initial matter, that the Examiner erred in determining that claim 1 is directed to an abstract idea (App. Br. 5–10). The Federal Circuit has explained that “the ‘directed to’ inquiry applies a stage-one filter to claims, considered in light of the [S]pecification, based on whether ‘their character as a whole is directed to excluded subject matter.’” *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016) (quoting *Internet Patents Corp.*, 790 F.3d at 1346). It asks whether the focus of the claims is on a specific improvement in relevant technology or on a process that itself qualifies as an “abstract idea” for which computers are invoked merely as a tool. *See id.* at 1335–36. Here, it is clear from the Specification that claim 1 focuses on an abstract idea, and not on any improvement to technology and/or a technical field.

The Specification is entitled “APPARATUS AND METHOD FOR TRANSPORTATION AND UPSSELLING OF PRODUCT,” and discloses that the invention generally relates to “a system and method of using product profiling to maximize transportation capacity while meeting other business

objectives, e.g., profitability” (Spec. ¶ 1). The Background section of the Specification describes that it is “industry practice for . . . shipping and freight (transportation) companies to utilize methods for maximizing the amount of product (load) that can be loaded into a transportation vehicle,” e.g., a truck, an airplane, a train, a shipping container or other means of transportation; this allows the transportation companies to maximize profits by ensuring that the maximum amount of product is placed in the vehicle for transportation from one location to another (*id.* ¶ 2). In order to maximize the load that can be transported, the Specification describes that transportation companies use complex algorithms, e.g., cubing algorithms, to ensure that the available space in the vehicle is used to its maximum capacity (*id.* ¶ 3). These algorithms are known to be employed to create a best fit within the transportation space, considering the volume, dimensions, and weight of the packages; however, according to the Specification, “[p]resently, cubing operations do not take[ ] into account . . . the actual product and associated costs of manufacturing, sales data, etc. of the product or other business considerations” (*id.*).

The present invention is ostensibly intended to address this issue by “using product profiling to maximize [the] load capacity of a vehicle while [also] meeting other business objectives, e.g., maximizing profitability” (*id.* ¶ 15). The product profiles are criteria to be applied in identifying products for shipment, and are machine-generated or provided by the user based on the user’s particular business objective, e.g., maximizing product profitability, decreasing product inventory (*id.* ¶¶ 15, 25). Once the set of products for shipping is selected, i.e., after the products that match the product profile are identified, a cubing algorithm is applied to the products

to ensure that the transportation vehicle is filled to capacity (*see, e.g., id.* ¶ 22). As an optional step, a “break point” may be machine-generated or provided by the user, and used to maximize profitability by eliminating products from being shipped that do not fall within a certain category, e.g., products that account for less than certain percentage of sales (*id.* ¶ 28).

Understood in light of the Specification, claim 1 is directed to a system comprising, *inter alia*, a CPU and program instructions, executable by the CPU, to: (1) retrieve product profiles and product information associated with the product profiles to identify products for shipment, i.e., “retrieve product profiles from a management system” and “retrieve product information [associated with the product profiles] from volatile memory of the management system” (limitations (b) and (c)); (2) eliminate products from being shipped based on a provided break point, i.e., “provide a break point to eliminate a skewed proportion for products being shipped . . . wherein the break point maximizes profitability for the products being shipped” (limitation (d)); and (3) perform cubing operations for the products selected for shipment to create a best fit within the vehicle space, i.e., “perform cubing operations using the management system for products associated with the product information” (limitation (e)). Although claim 1 recites the use of a CPU, a computer readable memory, and a computer readable storage media, the underlying processes recited in the claim, including (1) receiving information, i.e., product profiles, product information, and a break point; and (2) analyzing the information to identify products for shipment, which maximize profitability, are acts that, as the Examiner observes, could be performed by a human, e.g., mentally and/or manually, using pen and paper, with the use of a computer or any other

machine (*see, e.g.*, Ans. 4). And cubing operations, as described in the Specification, involve the use of “complex algorithms . . . to ensure that all available space in the vehicle is used to its maximum capacity” (Spec. ¶ 3). Simply put, claim 1 is directed to concepts that can be performed in the human mind, i.e., mental processes, and mathematical formulas, i.e., mathematical concepts, and, therefore, to an abstract idea. *See* 2019 REVISED PATENT SUBJECT MATTER ELIGIBILITY GUIDANCE, 84 Fed. Reg. 50, 52 (Jan. 7, 2019) (“Revised Guidance”).

The Federal Circuit has held that method steps that can be performed in the human mind, or by a human using pen and paper are “unpatentable mental processes.” *See CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1372 (Fed. Cir. 2011) (“It is clear that unpatentable mental processes are the subject matter of claim 3. All of claim 3’s method steps can be performed in the human mind, or by a human using a pen and paper.”); *see also Gottschalk v. Benson*, 409 U.S. 63, 67 (1972) (“[p]henomena of nature . . ., mental processes, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work.”). And mental processes remain unpatentable even when automated to reduce the burden on the user of what once could have been done with pen and paper. *CyberSource*, 654 F.3d at 1375 (“That purely mental processes can be unpatentable, even when performed by a computer, was precisely the holding of the Supreme Court in *Gottschalk v. Benson*.”).

Employing cubing algorithms to ensure that the maximum amount of product is placed in the transportation vehicle also is a longstanding practice in the transportation industry (*see* Spec. ¶ 3), and is substantially similar to

other practices that the courts have held abstract. *See, e.g., Digitech Image Techs., LLC v. Elec. for Imaging, Inc.*, 758 F.3d 1344, 1351 (Fed. Cir. 2014) (holding that a process that employs mathematical algorithms to manipulate existing information to generate additional information is abstract); *see also Parker v. Flook*, 437 U.S. 584, 595 (1978) (“If a claim is directed essentially to a method of calculating, using a mathematical formula, even if the solution is for a specific purpose, the claimed method is nonstatutory.” (internal citations omitted)). The law also is clear that “[a]dding one abstract idea . . . to another abstract idea . . . does not render [a] claim non-abstract.” *RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322, 1327 (Fed. Cir. 2017); *see also Fair Warning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1093–94 (Fed. Cir. 2016) (patent-ineligible claims were directed to a combination of abstract ideas).

We find no indication in the Specification, nor do Appellants direct us to any indication, that the operations recited in claim 1 invoke any assertedly inventive programming, require any specialized computer hardware or other inventive computer components, i.e., a particular machine, or that the claimed invention is implemented using other than generic computer components to perform generic computer functions. *See DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1256 (Fed. Cir. 2014) (“[A]fter *Alice*, there can remain no doubt: recitation of generic computer limitations does not make an otherwise ineligible claim patent-eligible.”). The Specification, in fact, suggests just the opposite, i.e., that the claimed invention may be implemented using only generic computer components (*see, e.g., Spec.* ¶¶ 18–20).

We also find no indication in the Specification that the claimed invention effects a transformation or reduction of a particular article to a different state or thing. Nor do we find anything of record, short of attorney argument, that attributes any improvement in computer technology and/or functionality to the claimed invention or, otherwise, indicates that the claimed invention integrates the abstract idea into a “practical application,” as that phrase is used in the Revised Guidance.<sup>4</sup>

---

<sup>4</sup> We note that Appellants’ briefs were filed, and the Examiner’s Answer mailed, before the USPTO issued the Revised Guidance, which, by its terms, applies to all applications, and to all patents resulting from applications, filed before, on, or after January 7, 2019. In accordance with the Revised Guidance, a claim is generally considered “directed to” an abstract idea if (1) the claim recites subject matter falling within one of the following groupings of abstract ideas: (a) mathematical concepts; (b) certain methods of organizing human activity, e.g., fundamental economic principles or practices, commercial or legal interactions; and (c) mental processes, and (2) the claim does not integrate the abstract idea into a practical application, i.e., apply, rely on, or use the judicial exception in a manner that imposes a meaningful limit on the judicial exception, such that the claim is more than a drafting effort designed to monopolize the judicial exception. *See* Revised Guidance, 84 Fed. Reg. at 54–55. The Revised Guidance references MANUAL OF PATENT EXAMINING PROCEDURE (“MPEP”) §§ 2106.05(a)–(c) and (e)–(h) in describing the considerations that are indicative that an additional element or combination of elements integrates the judicial exception, e.g., the abstract idea, into a practical application. *Id.* at 55. If the recited judicial exception is integrated into a practical application, as determined under one or more of these MPEP sections, the claim is not “directed to” the judicial exception.

Citing the USPTO’s May 4, 2016<sup>5</sup> and November 2, 2016<sup>6</sup> memoranda to the Patent Examining Corps, Appellants argue that the § 101 rejection cannot be sustained because the Examiner has not identified the specific claim limitations which set forth the alleged abstract idea, i.e., load scheduling, or explained why these claim limitations set forth an abstract idea (App. Br. 6; *see also* Reply Br. 2–3, 15–16). Appellants’ argument is not persuasive.

In rejecting the pending claims under § 101, the Examiner set forth a well-reasoned analysis of the claims and a comprehensive explanation of the bases for the rejection (Final Act. 2–4). The Examiner, thus, notified Appellants of the reasons for the rejection in a sufficiently articulate and informative manner as to meet the notice requirement of § 132. And we find that, in doing so, the Examiner set forth a *prima facie* case of patent-ineligibility. *See In re Jung*, 637 F.3d 1356, 1362 (Fed. Cir. 2011) (holding that the USPTO carries its procedural burden of establishing a *prima facie* case when its rejection satisfies the requirements of 35 U.S.C. § 132); *see also* JULY 2015 UPDATE: SUBJECT MATTER ELIGIBILITY,<sup>7</sup> p. 6 (setting forth a general notice requirement to establish a *prima facie* rejection under 35 U.S.C. § 101); May 4, 2016 Memorandum, 2 (“[T]he rejection . . . must provide an explanation . . . which [is] . . . sufficiently clear and specific

---

<sup>5</sup> Available at <https://www.uspto.gov/sites/default/files/documents/ieg-may-2016-memo.pdf>.

<sup>6</sup> Available at <https://www.uspto.gov/sites/default/files/documents/McRo-Bascom-Memo.pdf>.

<sup>7</sup> Available at <https://www.uspto.gov/sites/default/files/documents/ieg-july-2015-update.pdf>.

to provide applicant *sufficient notice* of the reasons for ineligibility and enable the applicant to effectively respond.”) (emphasis added).

Appellants do not contend that the Examiner’s rejection was not understood or that the Examiner, otherwise, failed to comply with the notice requirements of § 132. Indeed, Appellants’ understanding of the rejection is clearly manifested by Appellants’ responses, as set forth in Appellants’ briefs.

We also do not agree with Appellants that the Examiner overgeneralized claim 1 as directed to “load scheduling” or, otherwise, failed to consider the claim as a whole (App. Br. 7; *see also* Reply Br. 6–7). And, to the extent that Appellants argue that the § 101 rejection cannot be sustained because the particular language that the Examiner used in characterizing the concept to which claim 1 is directed is not recited in the claim (*see* Reply Br. 3–4), we note the Examiner’s formulation of the abstract idea need not copy the claim language.

It is clear from a fair reading of the Specification that the claimed invention is concerned with using product profiles to identify products for shipment that will allow the user to achieve a business objective, e.g., maximize profitability, while also ensuring that the transportation vehicle is used to its maximum load capability (*see, e.g.*, Spec. ¶¶ 15–16)). Claim 1, thus, recites the claimed method comprises “retriev[ing] product profiles from a management system”; “retriev[ing] product information [associated with the product profiles] from volatile memory of the management system”; “provid[ing] a break point to eliminate a skewed proportion for products being shipped . . . wherein the break point maximizes profitability for the products being shipped”; and “perform[ing] cubing operations using

the management system for products associated with the product information.” The Examiner’s determination that claim 1 is directed to “load scheduling” (Final Act. 2), in other words, identifying the products to be loaded for shipment, is fully consistent with the Specification, including the claim language.

We also note for the record that an abstract idea can be described at varying levels of abstraction. That claim 1 includes more or different words than the phrase the Examiner used to articulate the abstract idea to which the claim is directed is an insufficient basis to persuasively argue that the claim language has been mischaracterized or that the Examiner has, otherwise, failed to consider all of the limitations of the claim. *See Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1240–41 (Fed. Cir. 2016) (“An abstract idea can generally be described at different levels of abstraction. As the Board has done, the claimed abstract idea could be described as generating menus on a computer, or generating a second menu from a first menu and sending the second menu to another location. It could be described in other ways, including, as indicated in the specification, taking orders from restaurant customers on a computer.”).

Appellants’ argument that the features recited in claim 1 are “technological features which improve on the existing process of transportation” also is unpersuasive (App. Br. 7; *see also id.* at 8–10 and 12; Reply Br. 8, 14–15). Appellants assert that “the existing cubing process of transportation does not perform cubed operations after eliminating a skewed proportion for products being shipped” and “[t]herefore, claim 1 recites technological features which are not directed to an abstract idea” (App. Br. 7). Yet, “eliminating a skewed proportion for products being shipped,”

as described in the Specification, involves nothing more than comparing product information to a specified criterion, i.e., a “break point,” and excluding products from being shipped based on the comparison (*see, e.g.*, Spec. ¶ 28) — which, as explained above, is a mental process and, therefore, an abstract idea. *See, e.g., Berkheimer v. HP, Inc.*, 881 F.3d 1360, 1366 (Fed. Cir. 2018) (concluding that parsing, comparing, storing, and editing data are abstract ideas); *SmartGene, Inc. v. Advanced Biological Labs.*, 555 F. App’x 950 (Fed. Cir. 2014) (comparing new and stored information and using rules to identify options is an abstract idea).

We also fail to see, and Appellants do not adequately explain, how “eliminating a skewed proportion for products being shipped” before performing cubing operations (i.e., to create a best fit for loading product onto the transportation vehicle) is a technological improvement “on the existing process of transportation” (App. Br. 7; *see also id.* at 8–10, 12; Reply Br. 8, 10, 12–13). Eliminating a skewed proportion of products from being shipped may well improve a business process, i.e., by ensuring that more products with higher profitability can be loaded onto the vehicle for shipment (*see* Spec. ¶ 29). But, we fail to see, and Appellants do not explain, how excluding certain products from shipment in order to increase profitability amounts to an improvement in technology or a technical field.

Appellants also ostensibly maintain the claimed invention provides a technical solution to a technical problem in the existing process of transportation in that “the claimed invention takes into account the actual product and associated costs of manufacturing, sales, data, etc. of the product and business considerations” (Reply Br. 8; *see also id.* at 10 and 12-13). But, accounting for the actual product and associated costs in

determining which products to include in a shipment is not a technical problem; it is a business problem. And selecting products for shipment that meet particular business objectives is a business, not a technical solution.

Focusing specifically on step two of the *Mayo/Alice* analysis, Appellants note that the Federal Circuit, in *BASCOM Global Internet Services, Inc. v. AT&T Mobility LLC*, 827 F.3d 1341 (Fed. Cir. 2016), held that an inventive concept can be found in the non-conventional and non-generic arrangement of known conventional pieces (App. Br. 13). And Appellants argue that providing a break point to eliminate a skewed proportion for products being shipped and performing cubing operations for products associated with the product information, as recited in claim 1, is a non-conventional and non-generic arrangement of elements (*id.*).

Appellants maintain that this is so “because the claimed features eliminate a skewed proportion of products before performing a cubing operation, which is different from conventional cubing operations which only take into account volume, dimensions, and mass of packages” (*id.*).

Appellants’ reliance on *BASCOM* is misplaced. In *BASCOM*, the Federal Circuit determined that the claimed installation of a filtering tool at a specific location, remote from the end-users, with customizable filtering features specific to each end user provided an inventive concept in that it gave the filtering tool both the benefits of a filter on a local computer and the benefits of a filter on the ISP server. *BASCOM*, 827 F.3d at 1350. The court, thus, held that the second step of the *Mayo/Alice* framework was satisfied because the claimed invention “represents a ‘software-based invention[ ] that improve[s] the performance of the computer system itself.’” *BASCOM*, 827 F.3d at 1351 (stating that like *DDR Holdings*, where the

patent “claimed a technical solution to a problem unique to the Internet,” the patent in *BASCOM* claimed a “technology-based solution . . . to filter content on the Internet that overcomes existing problems with other Internet filtering systems . . . making it more dynamic and efficient”) (internal citations omitted).

We are not persuaded that a situation comparable to *BASCOM* is presented here. And, to the extent that Appellants maintain that claim 1 is patent-eligible because the claimed process of eliminating a skewed proportion of products before performing a cubing operation is different from conventional cubing operations (App. Br. 13), i.e., that the claimed process is novel, we note that neither a finding of novelty nor a non-obviousness determination automatically leads to the conclusion that the claimed subject matter is patent-eligible. *See Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 591 (2013) (“Groundbreaking, innovative, or even brilliant discovery does not by itself satisfy the § 101 inquiry.”); *see also Diamond v. Diehr*, 450 U.S. 175, 188–89 (1981) (“The ‘novelty’ of any element or steps in a process, or even of the process itself, is of no relevance in determining whether the subject matter of a claim falls within the § 101 categories of possibly patentable subject matter.”).

Further focusing on step two of the *Mayo/Alice* analysis, Appellants argue that even if claim 1 is directed to an abstract idea, claim 1 recites additional elements that amount to significantly more than the abstract idea itself (App. Br. 11–13; *see also* Reply Br. 13–14). Yet, the limitations that Appellants identify as amounting to significantly more (i.e., retrieving product profiles from a management system, retrieving product information from volatile memory of the management system, and eliminating a skewed

proportion for products being shipped) are part of the abstract idea itself, i.e., load scheduling; they are not additional elements to be considered when determining whether claim 1 includes additional elements or a combination of elements that is sufficient to amount to significantly more than the judicial exception.

It could not be clearer from *Alice*, that under step two of the *Mayo/Alice* framework, the elements of each claim are considered both individually and “as an ordered combination” to determine whether the additional elements, i.e., the elements *other* than the abstract idea itself, “transform the nature of the claim” into a patent-eligible application. *Alice Corp.*, 573 U.S. at 217 (internal quotations and citation omitted); *see Mayo*, 566 U.S. at 72–73 (requiring that “a process that focuses upon the use of a natural law also contain *other* elements or a combination of elements, sometimes referred to as an ‘inventive concept,’ sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the natural law itself” (emphasis added) (internal citation omitted)). In other words, the inventive concept under step two of the *Mayo/Alice* test cannot be the abstract idea itself:

It is clear from *Mayo* that the “inventive concept” cannot be the abstract idea itself, and *Berkheimer* . . . leave[s] untouched the numerous cases from this court which have held claims ineligible because the only alleged “inventive concept” is the abstract idea. *Berkheimer v. HP, Inc.*, 890 F.3d 1369, 1374 (Fed. Cir. 2018) (Moore, J., concurring); *see also BSG Tech. LLC v. BuySeasons, Inc.*, 899 F.3d 1281, 1290 (Fed. Cir. 2018) (“It has been clear since *Alice* that 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.”) (internal citation omitted).

The Examiner determined here, and we agree, that the only claim elements beyond the abstract idea are the claimed CPU, computer readable memory, and computer readable storage media, i.e., generic computer components used to perform generic computer functions (Final Act. 3) — a determination amply supported by, and fully consistent with the Specification (*see, e.g.*, Spec. 18–20).<sup>8</sup>

Appellants cannot reasonably contend, nor do they, that there is a genuine issue of material fact regarding whether operation of the claimed CPU is well-understood, routine, or conventional, where, as here, there is nothing in the Specification to indicate that the operations recited in claim 1 require any specialized hardware or inventive computer components or that the claimed invention is implemented using other than generic computer components to perform generic computer functions, e.g., receiving, matching, and processing information. Indeed, the Federal Circuit, in accordance with *Alice*, has “repeatedly recognized the absence of a genuine dispute as to eligibility” where claims have been defended as involving an

---

<sup>8</sup> The Office’s April 19, 2018 Memorandum to the Examining Corps from Deputy Commissioner for Patent Examination Policy, Robert W. Bahr, entitled, Changes in Examination Procedure Pertaining to Subject Matter Eligibility, Recent Subject Matter Eligibility Decision (*Berkheimer v. HP, Inc.*), available at <https://www.uspto.gov/sites/default/files/documents/memo-berkheimer-20180419.pdf>, expressly directs that an examiner may support the position that an additional element (or combination of elements) is not well-understood, routine or conventional with “[a] citation to an express statement in the specification . . . that demonstrates the well-understood, routine, conventional nature of the additional element(s)” (*id.* at 3).

inventive concept based “merely on the idea of using existing computers or the Internet to carry out conventional processes, with no alteration of computer functionality.” *Berkheimer*, 890 F.3d at 1373 (Moore, J., concurring) (internal citations omitted); *see also BSG Tech.*, 899 F.3d at 1291 (“BSG Tech does not argue that other, non-abstract features of the claimed inventions, alone or in combination, are not well-understood, routine and conventional database structures and activities. Accordingly, the district court did not err in determining that the asserted claims lack an inventive concept.”).

Responding to the Examiner’s Answer, Appellants argue in the Reply Brief that the claimed invention, as recited in claim 1, is not abstract “for similar reasons as *McRO*” (Reply Br. 5). But, we are not persuaded that the facts in *McRO* are sufficiently analogous to the present facts to control the outcome here.

In *McRO*, the Federal Circuit determined that the claim was not directed to an abstract idea, and was patent-eligible under 35 U.S.C. § 101 where the claim “focused on a specific asserted improvement in computer animation” of facial expressions made during speech and where “incorporation of the claimed rules, not the use of the computer . . . ‘improved [the] existing technological process’ by allowing the automation of further tasks.” *McRO*, 837 F.3d at 1314. The court emphasized that the automation went beyond, for example, merely “organizing [existing] information into a new form.” *Id.* at 1315 (internal quotes and citations omitted). Instead, the claim used limited rules in a process specifically designed to achieve an improved technological result in conventional industry practice. *Id.* at 1316. In this sense, *McRO* is akin to *DDR*

*Holdings, Enfish*, and similar decisions which have held claims patent-eligible where the claimed invention provided a technological improvement in industry practice. *See DDR Holdings*, 773 F.3d at 1257 (holding that claims reciting computer processor for serving “composite web page” were patent eligible because “the claimed solution is necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks”); *Enfish*, 822 F.3d at 1338 (holding that claims directed to self-referential table for computer database were patent eligible because claims were directed to an improvement in the functioning of a computer); *Visual Memory LLC v. NVIDIA Corp.*, 867 F.3d 1253, 1259 (Fed. Cir. 2017) (holding that claims directed to “an improved computer memory system” having many benefits were patent eligible).

In contrast here, claim 1 collects data, manipulates that data, and renders an output. Appellants do not persuasively argue that claim 1 provides an improvement in technology or a technical field, or that it improves the functionality of the computer itself.

Further, to the extent Appellants maintain that claim 1 is patent-eligible because, “similar to *McRO*, the claimed features avoid preemption because the claimed invention does not preempt the alleged abstract idea of load scheduling” (Reply Br. 5–6), we note that preemption is not the sole test for patent-eligibility. “The Supreme Court has made clear that the principle of preemption is the basis for the judicial exceptions to patentability” and “[f]or this reason, questions on preemption are inherent in and resolved by the § 101 analysis.” *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015) (citing *Alice Corp.*, 573 U.S. at 216). Although “preemption may signal patent ineligible subject matter,

the absence of complete preemption does not demonstrate patent eligibility.”  
*Id.*

We are not persuaded, on the present record, that the Examiner erred in rejecting independent claim 1 under 35 U.S.C. § 101. Therefore, we sustain the Examiner’s rejection. We also sustain the Examiner’s rejection of dependent claims 4, 7, and 10, which are not argued separately except based on their dependence from independent claim 1 (App. Br. 32).<sup>9</sup>

*Independent Claim 11*

For much the same reasons set forth above with respect to claim 1, we are not persuaded by Appellants’ arguments that the Examiner erred in determining that claim 11 is directed to an abstract idea (App. Br. 15–18). Claim 11 recites a method comprising: (1) retrieving product profiles and product information associated with the product profiles, including historical product information (steps (a) and (b)); (2) determining, based on the historical product information, whether a past product exists (step (c)); (3) identifying the past product for shipment if the past product exists

---

<sup>9</sup> Appellants’ further arguments with respect to claims 4, 7, and 10, presented for the first time in Appellants’ Reply Brief (Reply Br. 39), are waived here in the absence of any showing of good cause why the arguments could not have been timely presented in Appellants’ Appeal Brief. *See In re Hyatt*, 211 F.3d 1367, 1373 (Fed. Cir. 2000) (noting that an argument not first raised in the brief to the Board is waived on appeal); *Ex parte Nakashima*, 93 USPQ2d 1834, 1837 (BPAI 2010) (informative) (explaining that arguments and evidence not timely presented in the Principal Brief, will not be considered when filed in a Reply Brief, absent a showing of good cause explaining why the argument could not have been presented in the Principal Brief); *Ex parte Borden*, 93 USPQ2d 1473, 1477 (BPAI 2010) (informative) (“Properly interpreted, the Rules do not require the Board to take up a belated argument that has not been addressed by the Examiner, absent a showing of good cause.”).

(step (d)); and (4) performing cubing operations for the past products and additional products (step (e)). Similar to claim 1, claim 11 is, thus, directed to (1) receiving information, i.e., product profiles and product information, including historical product information; (2) analyzing the information to identify products, e.g., past products, for shipment; and (3) applying a cubing algorithm to the identified products and additional products associated with the product information to ensure that the transportation vehicle is filled to capacity, i.e., to mental processes and/or mathematical concepts, and, therefore, to an abstract idea.

As with claim 1, we find no indication in the Specification, nor do Appellants direct us to any indication, that the operations recited in claim 11 invoke any assertedly inventive programming, require any specialized computer hardware or other inventive computer components, i.e., a particular machine, or that the claimed invention is implemented using other than generic computer components to perform generic computer functions. There also is nothing of record, short of attorney argument, that attributes any improvement to technology or a technical field to the claimed invention, or that otherwise indicates that the claimed invention integrates the abstract idea into a “practical application,” as that term is used in the Revised Guidance.

Appellants argue that the features recited in claim 11 are “technological features which improve on the existing process of transportation”; that “the existing cubing process of transportation does not perform cubing operations for . . . past products and additional products associated with the product information”; and that “claim 11[, therefore,] recites technological features which are not directed to an abstract idea”

(App. Br. 15; *see also id.* at 16–18). Appellants appear to be arguing that “determining . . . that a past product exists based on . . . historical product information, i.e., step (c), as recited in claim 11, is a “technical feature,” which renders claim 11 non-abstract. Yet, that step involves nothing more than analyzing/comparing information, which the courts have repeatedly held is an abstract idea. *See, e.g., Intellectual Ventures*, 850 F.3d at 1340; *Elec. Power Grp.*, 830 F.3d at 1354. We also fail to see, and Appellants do not explain, how identifying past products for shipping amounts to a *technological* improvement “on the existing process of transportation.”

Turning to step two of the *Mayo/Alice* analysis, Appellants argue that even if claim 11 is directed to an abstract idea, claim 11 is, nonetheless, patent-eligible because the claim includes additional elements that amount to significantly more than the abstract idea itself (App. Br. 19–21). Appellants note that claim 11 recites “determining, using the management system, . . . a past product exists based on the historical product information,” and “performing, using the management system, cubing operations for the past products and additional products associated with the product information” (*id.* at 19). And Appellants argue that these features constitute an improvement to the technology and technical field of cubing operations (*id.*; *see also* Reply Br. 18–19, 23–24).

More particularly, Appellants maintain that “[t]hese features clearly improve the existing cubing process of transportation which only takes into account volume, dimensions, and mass by determining a past product exists based on the historical product information” (App. Br. 19–20). Yet, we find no indication in the Specification, nor do Appellants direct us to any indication, that the claimed invention alters or in way affects how the cubing

process is performed, i.e., that the cubing operation, as recited in claim 11, takes into account features other than product volume, dimensions, and mass. To the extent that claim 11 represents any modification in the cubing operation at all, that modification merely concerns the products to which the cubing operation is applied, i.e., that the products are past products and additional products associated with the product information. We fail to see, and Appellants do not explain, how performing cubing operations for products that have been identified as “past products and additional products associated with the product information” (in advance of and/or apart from any cubing operations), rather than for other/different products, somehow amounts to a *technological* improvement to the technical field of cubing operations.

Appellants’ further arguments are substantially similar to Appellants’ arguments with respect to claim 1, and are similarly unpersuasive of Examiner error. We are not persuaded, on the present record, that the Examiner erred in rejecting claim 11 under 35 U.S.C. § 101. Therefore, we sustain the Examiner’s rejection.

*Independent Claim 16*

Appellants’ arguments with respect to claim 16 (App. Br. 21–28; *see also* Reply Br. 26–35) are substantially similar to Appellants’ arguments with respect to claims 1 and 11, and are similarly unpersuasive of Examiner’s error. Therefore, we sustain the Examiner’s rejection of claim 16 under 35 U.S.C. § 101.

*Dependent Claims 2, 3, 5, 6, 8, 9, 12–15, and 17–20*

Appellants generally describe the recited features of each of dependent claims 2, 3, 5, 6, 8, 9, 12–15, and 17–20, and summarily assert

that “by using the[se] features . . . , the claimed invention is . . . an improvement to another technology or technical field” (App. Br. 29–32). But, Appellants do not provide any persuasive argument or technical reasoning to support that position. For example, Appellants do not direct our attention to anything in the Specification that attributes an improvement in technology or a technical field to the claimed invention; nor do Appellants identify the technology or technical field or explain in what way this technology or technical field is allegedly improved. We also find no indication in the Specification, nor do Appellants direct us to any indication, that the dependent claims invoke any assertedly inventive programming, require any specialized computer hardware or other inventive computer components, or that the claimed invention, as recited in these claims, is implemented using other than generic computer components to perform generic computer functions, which is not enough for patent-eligibility. *See Alice Corp.*, 573 U.S. at 223 (“[I]f a patent’s recitation of a computer amounts to a mere instruction to ‘implemen[t]’ an abstract idea ‘on . . . a computer,’ . . . that addition cannot impart patent eligibility.”) (internal citations omitted).

Appellants ostensibly maintain that dependent claims are patent-eligible because they recite features that are not well-understood, routine, and conventional activities (App. Br. 29–32). Yet, the features that Appellants identify are either part of the abstract idea itself, i.e., they are not additional elements to be considered when determining whether the claim includes additional elements or a combination of elements that is sufficient to amount to significantly more than the judicial exception, or are generic computer components (e.g., a handheld device including a CPU, as recited in

claim 19, and a server cluster, as recited in claim 20). As described above with respect to claim 1, the Examiner determined here, and we agree, that the only claim elements beyond the abstract idea are the claimed generic computer components (Final Act. 3). Appellants do not contend that there is a genuine issue of material fact regarding whether operation of these generic computer components is well-understood, routine, or conventional.

Responding to the Examiner's Answer, Appellants ostensibly maintain that providing a break point that ensures that a load capacity of a vehicle is optimized by eliminating one or more products that do not meet a threshold requirement, as recited in dependent claim 3, is an improvement in the technical field of cubing operations (Reply Br. 36). But, optimizing the load capacity of a vehicle is not a technical problem; it is a business concern related to maximizing profitability. And eliminating products that do not contribute to achieving that objective is a business, not a technical solution.

Also, as described above, with respect to claim 11, to the extent eliminating products that do not meet a threshold requirement affects the cubing operation at all, that effect merely concerns the identity of the particular products to which the cubing operation is applied, i.e., the cubing operation is applied to only those products that meet the threshold requirement. We fail to see, and Appellants do not explain, how performing cubing operations for products that have been identified (in advance of any cubing operations) as meeting a threshold requirement rather than for other/different products, somehow amounts to a *technological* improvement to the technical field of cubing operations.

Appellants also note in the Reply Brief that claim 20 recites that the system of claim 1 further comprises "a server cluster which comprises at

least two computing devices that communicate over a network, and at least one computing device of the at least two computing devices comprising a handheld device with the CPU for executing the management system” (Reply Br. 38). Appellants argue that “these features are technological features which help to improve on the existing process of transportation” (*id.*). Yet, the law is clear that “not every claim that recites concrete, tangible components escapes the reach of the abstract-idea inquiry.” *In re TLI Commc’ns LLC Patent Litig.*, 823 F.3d 607, 611 (Fed. Cir. 2016). The claimed invention, as recited in claim 20, is not directed to an improvement in computer network or server technology; instead, it is directed to identifying products for shipment and applying a cubing algorithm to the identified products, i.e., to load scheduling, and uses the recited components only in their ordinary and conventional capacity.

We are not persuaded, on the present record, that the Examiner erred in rejecting dependent claims 2, 3, 5, 6, 8, 9, 12–15, and 17–20 under 35 U.S.C. § 101. Therefore, we sustain the Examiner’s rejection.

#### DECISION

The Examiner’s rejection of claims 1–20 under 35 U.S.C. § 101 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED