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.
10/676,297	09/30/2003	Emerson P. Jones	GOLD11-00076	8191

132787 7590 12/22/2017

Docket Clerk-GOLD
P.O. Drawer 800889
Dallas, TX 75380

EXAMINER
VYAS, ABHISHEK

ART UNIT	PAPER NUMBER
3691	

NOTIFICATION DATE	DELIVERY MODE
12/22/2017	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):

patents@munckwilson.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte EROL HAKANOGLU and EMERSON P. JONES

Appeal 2016-006613[1]
Application 10/676,297
Technology Center 3600

Before ANTON W. FETTING, BRADLEY B. BAYAT, and MATTHEW S. MEYERS, *Administrative Patent Judges*.

BAYAT, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1–8 and 11–13 under 35 U.S.C. § 101 as reciting ineligible subject matter in the form of an abstract idea. *See* Final Act. 2–3 (mailed Jan. 30, 2015). We have jurisdiction to review the case under 35 U.S.C. §§ 134 and 6.

SUMMARY OF DECISION

We AFFIRM.

---

[1] The Appellants identify "Goldman, Sachs & Co." as the real party in interest. Appeal Br. 2 (filed Nov. 23, 2015).

STATEMENT OF THE CASE

Claimed Subject Matter

Appellants' "present invention relate[s] to methods and systems for analyzing a capital structure for a company (e.g., a public corporation)." Spec. 2, ll. 7–8. Method claims 1, 11, and 13 are the independent claims on appeal. Claim 1, reproduced below, is illustrative of the subject matter on appeal.

> 1. A method implemented by a programmed computer system comprising:
>
> obtaining, with the computer system, data associated with an entity including a number of common shares outstanding, a change in the effective number of common shares outstanding, which change in the effective number of common shares outstanding reflects the possibility, based upon an economically reasonable analysis in light of market conditions, of conversion of one or more convertible securities;
>
> iteratively changing, with the computer system, a value of a debt/equity ratio associated with the entity based on at least one simulation;
>
> calculating, with the computer system, a plurality of values of earnings per share associated with the entity based at least in part upon the debt/equity ratio;
>
> calculating, with the computer system, a plurality of values of earnings per share risk associated with the entity based at least in part upon the debt/equity ratio values for that entity, the calculation including anticipated conversion of the one or more convertible securities, the anticipated conversion based upon the economically reasonable analysis in light of market conditions;
>
> recording, with the computer system, the calculated earnings per share values and the calculated earnings per share risk values; and

> outputting, with the computer system, the recorded calculated earnings per share values associated with the entity and the recorded calculated earnings per share risk values associated with the entity to a user;
>
> wherein the recorded calculated earnings per share values associated with the entity and the recorded calculated earnings per share risk values associated with the entity characterize a capital structure of the entity in connection with a cost to the entity of a selected debt/equity ratio relative to a risk associated with the selected debt/equity ratio.

Appeal Br. 33–34 (Claims App'x).

ANALYSIS

We are not persuaded the Examiner erred in concluding that claims 1–8 and 11–13 are directed to non-statutory subject matter.

The Supreme Court in *Alice* reiterated a two-step framework, set forth previously in *Mayo Collaborative Services v. Prometheus Laboratories., Inc.*, 132 S.Ct. 1289, 1300 (2012), "for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of these concepts." *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S.Ct. 2347, 2355 (2014). 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 so, the second step is to consider the elements of the claims "individually and 'as an ordered combination"' to determine whether the additional elements "'transform the nature of the claim' into a patent-eligible application." *Id.* (*citing Mayo*, 132 S.Ct. at 1291, 1297). In other words, the second step is to "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.* (*citing Mayo*, 132 S.Ct. at 1294).

Independent method claims 1, 11, and 13 are each directed to "analyz[ing] a company's capital structure (e.g., for identifying and implementing the economically optimal solutions to a company's capital structure challenges)" through a series of calculations. *See* Spec. 2, ll. 29–31; *cf.* Final Act. 5; Ans. 3. In each independent claim, the obtaining, changing (e.g., calculations using a Monte Carlo simulation), calculating values, and recording steps can be performed entirely through mental thought. The outputting step is merely insignificant extra-solution activity that amounts only to an output step after the mental process steps.

As an initial matter, we note that the claims are largely directed to mathematical calculations in a specific field. As such, they are similar to the claims determined to be unpatentable in *Bilski v. Kappos*, 130 S.Ct. 3218, 3223–3224 (2010) ("Claim 1 describes a series of steps instructing how to hedge risk. Claim 4 puts the concept articulated in claim 1 into a simple mathematical formula . . . . The remaining claims explain how claims 1 and 4 can be applied to allow energy suppliers and consumers to minimize the risks resulting from fluctuations in market demand for energy") and *Gottschalk v. Benson*, 409 U.S. 63, 65 (1972) ("The procedures set forth in the present claims . . . are a generalized formulation for programs to solve mathematical problems of converting one form of numerical representation to another.").

Furthermore, the Federal Circuit has held that if a method can be performed by human thought alone, or by a human using pen and paper, it is merely an abstract idea and is not patent-eligible under § 101. *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1373 (Fed. Cir. 2011) ("[A] method that can be performed by human thought alone is merely an abstract

idea and is not patent-eligible under § 101."). *See* Ans. 3 (mailed Apr. 22, 2016). Additionally, mental processes, e.g., calculating values, as recited in claim 1, remain unpatentable even when automated to reduce the burden on the user of what once could have been done with pen and paper. *Id.* 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*, [409 U.S. 63 (1972)]."). Each of the independent claims therefore is directed to an abstract idea, because each can be performed by human thought alone or by a human using pen and paper.

Turning to the second step of the *Alice* analysis, because we find that the claims are directed to abstract ideas, the claims must include an "inventive concept" in order to be patent-eligible, i.e., there must be an element or combination of elements that is sufficient to ensure that the claim in practice amounts to significantly more than the abstract idea itself. Each independent claim specifies that every limitation is performed by a "programmed computer system." The Specification does not define a programmed computer system, but describes that

> the method embodiments described herein may, of course, be implemented using any appropriate computer hardware and/or computer software. In this regard, those of ordinary skill in the art are well versed in the type of computer hardware that may be used (e.g., a mainframe, a mini-computer, a personal computer ("PC"), a network (e.g., an intranet and/or the Internet)), the type of computer programming techniques that may be used (e.g., object oriented programming), and the type of computer programming languages that may be used (e.g., C++, Basic).

Spec. 59, ll. 11–17. "[A]fter *Alice*, there can remain no doubt: recitation of generic computer limitations does not make an otherwise ineligible claim patent-eligible. The bare fact that a computer exists in the physical rather

than purely conceptual realm is beside the point." *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1256 (Fed. Cir. 2014) (internal citations and quotation marks omitted).

Nothing in the independent claims purports to improve computer functioning or "effect an improvement in any other technology or technical field." *Alice*, 134 S.Ct. at 2359. Nor do the claims appear to solve a problem unique to the Internet. *See DDR Holdings*, 773 F.3d at 1256. The claims also do not appear to be adequately tied to "a particular machine or apparatus," because *any* appropriate computer hardware and/or software may be used. *Bilski*, 561 U.S. at 601.

As independent claims 1, 11, and 13 each are directed to an abstract idea, and nothing in the claims adds an inventive concept, the claims are not patent-eligible under § 101. Therefore, we sustain the Examiner's rejection of claims 1–8 and 11–13 under 35 U.S.C. § 101.

DECISION

We AFFIRM the rejection of claims 1–8, and 11–13 under 35 U.S.C. § 101.

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

AFFIRMED