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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte KARIN MURTHY,
ZHIMING SHEN, CHRISTOPHER CHARLES YOUNG,
and SAI ZENG

Appeal 2019-003313
Application 15/006,571
Technology Center 2400

Before KALYAN K. DESHPANDE, CHARLES J. BOUDREAU, and
SHARON FENICK, *Administrative Patent Judges*.

DESHPANDE, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the
Examiner’s decision to reject claims 1–20. We have jurisdiction under
35 U.S.C. § 6(b)(1).

We REVERSE.

¹ We use the word “Appellant” to refer to “applicant” as defined in
37 C.F.R. § 1.42. Appellant identifies International Business Machines
Corporation as the real party in interest. Appeal Br. 3.

CLAIMED SUBJECT MATTER

Appellant’s invention “generally relates to cloud garbage collecting” in order to address, for example, overprovisioned or under-utilized servers and resources. Spec. ¶ 1; *see id.* ¶ 4.

Claims 1, 12, and 20 are independent. Claim 1, reproduced below, is illustrative of the subject matter on appeal (emphases added):

1. A method for collecting unproductive resources in a network infrastructure, the method comprising:

collecting data relating to resources of a network infrastructure;

selecting an analytics model based on a type of the collected data;

executing the selected analytics model to classify a resource as one of unproductive and productive and to assign a corresponding confidence level;

determining an action plan for each confidence level; and

executing the action plan for the resource.

Appeal Br. 22 (Claims App.).

REJECTIONS

The Examiner rejects claims 1–4, 6, 11–14, 16, and 20 under 35 U.S.C. § 103 as being unpatentable over Brooker² and Kavuri.³ Final Act. 4–7.

² Brooker et al., US 2016/0269313 A1 (pub. Sept. 15, 2016).

³ Kavuri et al., US 2015/0339197 A1 (pub. Nov. 26, 2015).

The Examiner rejects claims 5, 7, 8, 15, 17, and 18 under 35 U.S.C. § 103 as being unpatentable over Brooker, Kavuri, and Eggen.⁴ Final Act. 8–11.

The Examiner rejects claims 9, 10, and 19 under 35 U.S.C. § 103 as being unpatentable over Brooker, Kavuri, Eggen, and Lombrozo.⁵ Final Act. 11–12.

OPINION

The Examiner relies on Brooker for disclosing the limitation of “selecting an analytics model based on a type of the collected data,” as recited in independent claims 1, 12 and 20. Final Act. 3–5 (citing Brooker ¶¶ 39–40); Ans. 4–5, 7–8 (citing Brooker ¶¶ 18–21, 39–43). Specifically, the Examiner cites Brooker’s disclosure of collecting “information, metrics, or metadata” as “placement criteria” to “perform various kinds of analysis to identify placement locations for resources,” including “configuration analysis.” Brooker ¶¶ 39–40 (cited at Final Act. 3, 5; Ans. 7–8).

Appellant argues that Brooker is silent on the use of analytics *models* and that, while Brooker discloses various analyses, “not all analytic processes require the use of models.” Appeal Br. 13; *see id.* at 14–15, 20; Reply Br. 2. Appellant further argues that Brooker does not teach or suggest “selecting a specific model for the analysis based on the type of data collected.” Appeal Br. 20; *see id.* at 14–15.

We agree with Appellant. The Examiner finds that Brooker’s “various kinds of analysis,” including “configuration analysis,” “cost-benefit

⁴ Eggen et al., US 2017/0126500 A1 (pub. May 4, 2017).

⁵ Lombrozo et al., US 2016/0209844 A1 (pub. July 21, 2016).

migration analysis,” “volume placement” analysis, and “resource host fragmentation analysis,” are analytics models. Final Act. 5 (citing Brooker ¶ 40); Ans. 4–5, 7 (citing ¶¶ 18–21, 40–43). The Examiner appears to rely on an implicit disclosure of analytics models in Brooker, finding that “all types of analysis must be modeled to (1) take as input a type of data, (2) manipulate data, (3) output data.” Final Act. 5 (emphasis omitted). However, the Examiner does not provide sufficient evidence to support that finding, and it is not clear from the record, that Brooker’s types of analysis teach or suggest the use of an analytics model.⁶

Furthermore, the Examiner finds that Brooker’s “configuration analysis is adapted in the case it needs to be applied to [a] virtual resource” (Final Act. 3 (citing Brooker ¶ 40)) and characterizes Brooker’s adapted configuration analysis as an analytics model and whether “the resources include[] virtual instances attached to the data volume or not” as a type of collected data (Final Act. 5; *see id.* at 3–4). According to the Examiner, Brooker selects an analytics model based on a type of collected data in that, “based on data collected to perform the configuration analysis, the configuration analysis is performed.” Ans. 4. We find the Examiner’s

⁶ Appellant argues that the Examiner “attempted to improperly take Official Notice” that “[i]t is well known in the art that models used for analysis are methods to conduct the analysis process” in the Final Office Action, without affording Appellant “an opportunity to defend” and “without providing documentary support.” Appeal Br. 12–13 (citing Final Act. 3); Reply Br. 2–3. The Examiner states that “no official notice was taken.” Ans. 4. We understand Appellant’s argument to be that the finality of the Office Action was premature, which we do not consider here because that is a matter reviewable by petition and outside of the Board’s jurisdiction. MPEP §§ 706.07(c), 1002.02(c)(3)(a).

reasoning to be strained. Similarly, we do not agree with the Examiner that Brooker’s cost-benefit migration analysis is an analytics model *selected based on* a type of collected data simply by virtue of being *performed using* corresponding input data, such as a placement score. *See id.* at 7–8 (citing Brooker ¶¶ 18–21).

Accordingly, we determine that the Examiner errs in finding that Brooker teaches or suggests an “analytics model,” as well as “selecting an analytics model based on a type of the collected data.”

The Examiner further relies on Brooker for the limitation of “classify[ing] a resource as one of unproductive and productive,” as recited in independent claims 1, 12, and 20. Final Act. 3–5 (citing Brooker ¶¶ 15, 18, 39); Ans. 5–6. Specifically, the Examiner cites Brooker’s disclosure that sub-optimal resource placements may result in “underutilized resource hosts, inefficient or less durable configurations for distributed resources, and/or various other kinds of waste or inefficiency for the resource or distributed system as a whole.” Brooker ¶ 15; *see* Final Act. 3–4; Ans. 5–6. According to the Examiner, Brooker’s “resources are migrated based on sub-optimal placement leading to waste, inefficiency, and underutilized resources” (Ans. 5) and, “when a resource is not being utilized it is selected for migration and is equivalent to being classified as unproductive” (Final Act. 5 (emphasis omitted)).

Appellant argues that “Brooker does not classify resources as ‘productive’ or ‘unproductive’” according to the Specification’s definition of an “unproductive resource.” Appeal Br. 17 (citing Spec. ¶ 25). According to Appellant, “Brooker is concerned with optimizing resource placement by

implementing opportunistic resource migration,” but does not “make any attempt to target unproductive resources for migration.” *Id.*

We agree with Appellant that the cited portions of Brooker fail to teach or suggest selecting resources for migration by classifying them as unproductive or productive based on the definition provided in the Specification. The Specification provides:

[T]he term “unproductive resource” is used to denote a resource that is not performing any productive work. An unproductive resource may be idle, inactive, or unused. However, not every idle, inactive, or unused resource is necessarily unproductive (e.g., a disaster recovery server may be idle for a long time but still serves a productive purpose). Also, an active resource may still be unproductive if the resource performs work that nothing depends on.

Spec. ¶ 25. That is, the Specification provides that an “unproductive resource” is “a resource that is not performing any productive work.” Although the Examiner interprets an “unproductive resource” differently, to mean “a resource that is not performing optimally based on its placement” (Final Act. 3), that interpretation is incorrect because the Specification’s definition controls. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316 (Fed. Cir. 2005) (en banc) (“[O]ur cases recognize that the specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor’s lexicography governs.”); *Martek Biosciences Corp. v. Nutrinova, Inc.*, 579 F.3d 1363, 1380 (Fed. Cir. 2009) (“When a patentee explicitly defines a claim term in the patent specification, the patentee’s definition controls.”). And, while the Examiner finds that the Specification’s definition of an “unproductive resource” is “relative,” “indefinite,” and “non-limiting” (Final

Act. 2–3; Ans. 6), a person with ordinary skill in the art would have understood from the Specification that an “unproductive resource” is a resource that is “idle, inactive, or unused” without “serv[ing] a productive purpose,” or a resource that “performs work that nothing depends on.” Spec. ¶ 25; *see also id.* ¶ 60 (explaining that a machine “running applications that are not actually needed by users” is unproductive, and that a machine that “may appear idle at a given moment” or “is idle most of the time, but required to be available at any time for disaster recovery or backup purposes” is productive).

Accordingly, we determine that the Examiner errs in finding that Brooker teaches or suggests “executing the selected analytics model to classify a resource as one of unproductive and productive” as claimed.

For the foregoing reasons, we do not sustain the Examiner’s § 103 rejections of claims 1–20.

CONCLUSION

The Examiner’s rejections of claims 1–20 under 35 U.S.C. § 103 are reversed.

DECISION SUMMARY

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/ Basis	Affirmed	Reversed
1–4, 6, 11–14, 16, 20	103	Booker, Kavuri		1–4, 6, 11–14, 16, 20
5, 7, 8, 15, 17, 18	103	Booker, Kavuri, Eggen		5, 7, 8, 15, 17, 18
9, 10, 19	103	Booker, Kavuri, Eggen, Lombrozo		9, 10, 19
Overall Outcome				1–20

REVERSED