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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* ANURAG BHARDWAJ,  
NEELAKANTAN SUNDARESAN,  
and ROBINSON PIRAMUTHU

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Appeal 2019-001605<sup>1</sup>  
Application 13/946,814  
Technology Center 3600

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Before ANTON W. FETTING, BRUCE T. WIEDER, and  
ROBERT J. SILVERMAN, *Administrative Patent Judges*.

FETTING, *Administrative Patent Judge*.

DECISION ON APPEAL

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<sup>1</sup> We use the word Appellant to refer to “applicant” as defined in 37 C.F.R. § 1.42(a). Appellant identifies eBay Inc. as the real party in interest. Appeal Br. 2.

STATEMENT OF THE CASE<sup>2</sup>

Anurag Bhardwaj, Neelakantan Sundaresan, and Robinson Piramuthu (Appellant) seek review under 35 U.S.C. § 134 of a final rejection of claims 1–16 and 20, the only claims pending in the application on appeal. We have jurisdiction over the appeal pursuant to 35 U.S.C. § 6(b).

The Appellant invented a way of providing user targeted recommendations on a device. Specification para. 2.

An understanding of the invention can be derived from a reading of exemplary claim 7, which is reproduced below (bracketed matter and some paragraphing added).

7. A method for providing recommendations, the method comprising:

- [1] creating first sensor data by directly measuring,
  - via three dimensional (3D) depth sensing,
  - using at least one sensor included in an item worn by a user,
  - one or more physical dimensions of one or more body parts of the user while the item is worn by the user;
- [2] determining a user state
  - based on the first sensor data that includes the body measurement data;

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<sup>2</sup> Our decision will make reference to the Appellant’s Appeal Brief (“Br.,” filed September 5, 2018) and the Examiner’s Answer (“Ans.,” mailed October 9, 2018), and Final Action (“Final Act.,” mailed March 1, 2018)

and

[3] in response to a state change being satisfied by at least the user state, determining,

using at least one processor,

a recommendation that includes [a description of] an article of clothing from an inventory to present on an electronic mobile device associated with the user,<sup>[3]</sup>

the recommendation being determined based on the user state and a profile associated with the user.

The Examiner relies upon the following prior art:

Name	Reference	Date
Schwartz	US 2007/0219059 A1	Sept. 20, 2007
Alten	US 2008/0218310 A1	Sept. 11, 2008
Stirling	US 7,602,301 B1	Oct. 13, 2009
Coza	US 2013/0274040 A1	Oct. 17, 2013
Adeyoola	US 2014/0176565 A1	June 26, 2014

Claims 1–16 and 20 stand rejected under 35 U.S.C. § 101 as directed to a judicial exception without significantly more.

Claims 1–13 and 20 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Coza, Adeyoola, and Stirling.

Claims 14 and 15 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Coza, Adeyoola, Stirling, and Alten.

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<sup>3</sup> The recommendation is not literally written on a product. Instead, its content describes (includes) a product. E.g. Specification paragraph 56.

Claim 16 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Coza, Adeyoola, Stirling, and Schwartz.

### ISSUES

The issues of eligible subject matter turn primarily on whether the claims recite more than abstract conceptual advice of results desired.

The issues of obviousness turn primarily on whether the prior art described “directly measuring, via three dimensional (3D) depth sensing, using at least one sensor included in an item worn by a user, one or more physical dimensions of one or more body parts of the user.” Claim 7, limitation 1.

### FACTS PERTINENT TO THE ISSUES

The following enumerated Findings of Fact (FF) are believed to be supported by a preponderance of the evidence.

#### *Facts Related to the Prior Art*

##### *Coza*

01. Coza is directed to monitoring an object during an athletic activity, and more particularly, monitoring the movement of a sport ball used by an individual during an athletic activity. Coza para. 2.

##### *Adeyoola*

02. Adeyoola is directed to generating and sharing a virtual body model of a person combined with an image of a garment, generating an image of a user in a garment, generating garment size recommendations, visualizing/generating make-up and

hairstyle recommendations, generating a virtual body model of a user, sharing a virtual body model of a person, and enabling users to interact with virtual body models. Adeyoola para. 2.

*Stirling*

03. Stirling is directed to measuring and analyzing movements of a body and for communicating information related to such body movements over a network. Stirling 1:34–37.

*PrimeSense*

04. PrimeSense is directed to describing the PrimeSense 3D sensors.<sup>4</sup> PrimeSense Title.
05. PrimeSense sensors perform 3D depth sensing by coding the scene with near-IR light, and reading the coded light back from the scene using a standard off-the-shelf CMOS image sensor. This is the process that enables depth acquisition. PrimeSense 2.
06. PrimeSense made three sensor models: Carmine 1.08, Carmine 1.09, and Capri 1.25. PrimeSense 3.
07. The Carmine 1.08 sensor had a visual range of 0.8–3.5 meter.<sup>5</sup> PrimeSense 3.
08. The Carmine 1.09 sensor had a visual range of 0.35–1.4 meter.<sup>6</sup> PrimeSense 3.

*Tech Journal*

09. The Tech Journal is directed to describing the PrimeSense Capri 1.25 sensor.<sup>7</sup> Tech Journal Title.

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<sup>4</sup> PrimeSense, Primesense 3D Sensors, <https://www.i3du.gr/pdf/primesense.pdf> (hereinafter “PrimeSense”).

<sup>5</sup> This equates to a minimum distance of 31–32 inches.

<sup>6</sup> This equates to a minimum distance of 13–14 inches.

10. The Capri 1.25 sensor had a visual range of 0.8–3.5 meter.  
Tech Journal 1.

*Bury*

11. Bury is directed to describing body sizing pods.<sup>8</sup> Bury, Title.
12. These pods use the same sensors as used in Microsoft Kinect (PrimeSense sensors-see Wong, *infra*) to measure waist, bust, hips, and leg length. Bury 1.

*Wong*<sup>9</sup>

13. Wong is directed to describing how Kinect works. Wong, Title.
14. Microsoft Kinect relies on PrimeSense sensors to sense in three dimensions. Wong 1–2.

## ANALYSIS

Initially we construe the limitation “directly measuring, via three dimensional (3D) depth sensing, using at least one sensor included in an item worn by a user, one or more physical dimensions of one or more body parts of the user.” Claim 7, limitation 1. On its face, this requires measuring a user’s body part dimension. This is done using three dimensional (3D) depth sensing to directly measure the dimension with a sensor. The Specification describes examples of several sensors, but only one is described as using three dimensional (3D) depth sensing. This is the series

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<sup>7</sup> *PrimeSense Unveiled World’s Smallest 3D Sensor “Capri 1.25” At CES 2013*, The Tech Journal, Jan. 12, 2013 (hereinafter “Tech Journal”).

<sup>8</sup> Bury et al., *Body-Metrics launches Kinect-powered body-sizing pods at Bloomingdales*, Betakit, Aug. 9, 2012 (hereinafter “Bury”).

<sup>9</sup> Wong, *How Microsoft’s PrimeSense-based Kinect Really Works*, *ElectronicDesign*, Mar. 16, 2011.

of PrimeSense sensors manufactured by PrimeSense Americas of Los Altos, California. Spec. ¶ 44. The Specification does not describe any other examples and does not describe how such sensors could be constructed or how to otherwise perform three dimensional (3D) depth sensing. The Specification enables the claims only by using PrimeSense sensors.

PrimeSense, in its product literature, explicitly refers to its sensing as depth sensing as recited in the claims and that its sensors can measure sizes. It does so using 3D sensing technology that gives digital devices the ability to observe a scene in three dimensions. It translates these observations into a synchronized image stream. Thus, directly measuring as recited in the claims means measuring by directly sensing the objective by the sensor to observe a scene in three dimensions and not by indirectly measuring from comparisons of data among multiple sensors or relying on otherwise known measurements between sensors. This interpretation is further confirmed by Appellant's arguments that the other prior art sensors in Stirling and Coza "can only measure distances between sensors or between a sensor and a reflective surface, and thus could not measure body parts of a person." Appeal Br. 22.

Of particular relevance is that the claims recite that the sensors are included in an item worn by the user. All PrimeSense sensors at the time of filing had a sensing distance range of 0.35–1.4 meter to 0.8–3.5 meter. The import is that the sensor had to be minimally 0.35 meter (13–14 inches) from what was being observed to so measure. The manner of wearing as claimed necessarily accommodated this requirement or else the sensor could not generate and receive proper data for the recited measurement.



That PrimeSense sensors were an enabling embodiment that could measure body parts as recited is confirmed by their use in Bodymetrics' Body Sensing Pods which measured body part measurements as recited in the claims, albeit as part of a dressing room like structure rather than a worn garment.

We therefore construe the phrase “directly measuring, via three dimensional (3D) depth sensing, using at least one sensor included in an item worn by a user, one or more physical dimensions of one or more body parts of the user” as meaning measuring one or more physical dimensions of one or more body parts of the user by directly observing a scene in three dimensions including the body parts by the sensor that is included in a garment worn so as to accommodate the sensor range requirements.

*Claims 1–16 and 20 rejected under 35 U.S.C. § 101 as directed to a judicial exception without significantly more*

#### STEP 1<sup>10</sup>

Claim 7, as a method claim, nominally recites one of the enumerated categories of eligible subject matter in 35 U.S.C. § 101. The issue before us is whether it is directed to a judicial exception without significantly more.

#### STEP 2

The Supreme Court

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<sup>10</sup> For continuity of analysis, we adopt the steps nomenclature from 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019) (“Revised Guidance”).

set forth a framework for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts. First, [] determine whether the claims at issue are directed to one of those patent-ineligible concepts. If so, we then ask, “[w]hat else is there in the claims before us? To answer that question, [] 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. [The Court] described step two of this analysis as a 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.”

*Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 573 U.S. 208, 217–18 (2014) (citations omitted) (citing *Mayo Collaborative Servs. v. Prometheus Labs, Inc.*, 566 U.S. 66 (2012)). To perform this test, we must first determine what the claims are directed to. This begins by determining whether the claims recite one of the judicial exceptions (a law of nature, a natural phenomenon, or an abstract idea). Then, if the claims recite a judicial exception, determining whether the claims at issue are directed to the recited judicial exception, or whether the recited judicial exception is integrated into a practical application of that exception, i.e., that the claims “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. 54. If the claims are directed to a judicial exception, then finally determining whether the claims provide an inventive concept because the additional elements recited in the claims provide significantly more than the recited judicial exception.

STEP 2A Prong 1

At a high level, and for our preliminary analysis, we note that method claim 7 recites creating sensor data, determining user state data, and determining recommendation data. Creating data is generating data. Determining data is rudimentary data analysis. Thus, claim 7 recites generating and analyzing data. From this we see that claim 7 does not recite the judicial exceptions of either natural phenomena or laws of nature.

Under Supreme Court precedent, claims directed purely to an abstract idea are patent in-eligible. As set forth in the Revised Guidance, which extracts and synthesizes key concepts identified by the courts, abstract ideas include: (1) mathematical concepts;<sup>11</sup> (2) certain methods of organizing human activity;<sup>12</sup> and (3) mental processes.<sup>13</sup> Among those certain methods of organizing human activity listed in the Revised Guidance are commercial or legal interactions. Like those concepts, claim 7 recites the concept of managing sales activity. Specifically, claim 7 recites operations that would ordinarily take place in advising one to recommend an article for sale based

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<sup>11</sup> See, e.g., *Gottschalk v. Benson*, 409 U.S. 63, 71–72 (1972); see also *Bilski v. Kappos*, 561 U.S. 593, 611 (2010); *Mackay Radio & Telegraph Co. v. Radio Corp. of Am.*, 306 U.S. 86, 94 (1939); and *SAP America, Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1163 (Fed. Cir. 2018).

<sup>12</sup> See, e.g., *Bilski*, 561 U.S. at 628; see also *Alice*, 573 U.S. at 219–20; *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 715 (Fed. Cir. 2014); *Smart Sys. Innovations, LLC v. Chicago Transit Auth.*, 873 F.3d 1364, 1383 (Fed. Cir. 2017); and *In re Marco Guldenaar Holding B.V.*, 911 F.3d 1157, 1160–61 (Fed. Cir. 2018).

<sup>13</sup> See, e.g., *Benson*, 409 U.S. at 67; see also *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1371–72 (Fed. Cir. 2011); and *Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1318 (Fed. Cir. 2016).

on its applicability to a customer's changing needs. The advice to recommend an article for sale based on its applicability to a customer's changing needs involves providing recommendations, which is an economic sales act, and determining a recommendation that includes an article of clothing from an inventory, which is an act ordinarily performed in the stream of commerce. For example, claim 7 recites "providing recommendations," which is an activity that would take place whenever one is proposing a sale. Similarly, claim 7 recites "determining . . . a recommendation that includes an article of clothing from an inventory," which is also characteristic of proposing an inventory item for sale.

The Examiner determines the claims to be directed to determining recommendations based on a user state. Final Act. 6.

The preamble to claim 7 recites that it is a method for providing recommendations. The steps in claim 7 result in managing sales activity by recommending an article for sale based on its applicability to a customer's changing needs absent any technological mechanism other than a conventional computer for doing so.

As to the specific limitations, limitations 1–3 recite generic and conventional generating and analyzing of user data, which advise one to apply generic functions to get to these results. The limitations thus recite advice for recommending an article for sale based on its applicability to a customer's changing needs. To advocate recommending an article for sale based on its applicability to a customer's changing needs is conceptual advice for results desired and not technological operations.

The Specification at paragraph 2 describes the invention as relating to providing user targeted recommendations on a device. Thus, all this

intrinsic evidence shows that claim 7 recites managing sales activity. This is consistent with the Examiner's determination.

This in turn is an example of commercial or legal interactions as a certain method of organizing human activity because managing sales activity is a way of directing human commercial interaction for sales. The concept of managing sales activity by recommending an article for sale based on its applicability to a customer's changing needs is one idea for qualifying customers for sales. The steps recited in claim 7 are part of how this might conceptually be premised.

From this we conclude that at least to this degree, claim 7 recites managing sales activity by recommending an article for sale based on its applicability to a customer's changing needs, which is a commercial and legal interaction, one of certain methods of organizing human activity identified in the Revised Guidance, and, thus, an abstract idea.

### STEP 2A Prong 2

The next issue is whether claim 7 not only recites, but is more precisely directed to this concept itself or whether it is instead directed to some technological implementation or application of, or improvement to, this concept *i.e.* integrated into a practical application.<sup>14</sup>

Here, as Appellant argues at Appeal Brief 18–19, we find the claims do recite some technological implementation in applying this concept.

Taking the claim elements separately, the operation performed by the computer at each step of the process is expressed with implementation

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<sup>14</sup> See, e.g., *Alice*, 573 U.S. at 223 (discussing *Diamond v. Diehr*, 450 U.S. 175 (1981)).

details. Claim 7, step 1 recites creating sensor data using a sensor in a worn item to directly measure body parts. Claim 7 step 2 recites determining some user state based on this sensor data that includes the body measurement data. The final step uses this data. As we construe *supra*, this means measuring one or more physical dimensions of one or more body parts of the user by directly observing a scene in three dimensions, including the body parts, by the sensor that is included in a garment worn so as to accommodate the sensor range requirements and determining a state based on actual body part dimensions as measured by 3D depth sensors.

Thus claim 7 recites a specific technological means for acquiring actual physical measurement data to infer some bodily state. Contrary to the Examiner's response at Answer 4–7, we cannot say this recites acquiring data by any and all possible means devoid of technological implementation details. The Examiner appears to base his determination on the commercial availability of the components. But using commercially available components in inventive ways may be patent eligible.

We conclude that claim 7 is directed to achieving the result of the concept of managing sales activity by recommending an article for sale based on its applicability to a customer's changing needs as performed by a generic computer. But claim 7 does so by creating sensor data using a sensor in a worn item to directly measure body parts in three dimensions and determining a user's state based on actual body part dimensions as measured by 3D depth sensors. This is inventive given that the garment must be worn in an atypical manner to accommodate the minimum distance between sensor and objective (body parts) required by the known enabled

sensor ranges at date of filing. The claim therefore integrates the judicial exception into a practical application.

*Claims 1–13 and 20 rejected under 35 U.S.C. § 103(a) as unpatentable over Coza, Adeyoola, and Stirling*

We are persuaded by Appellant's argument that

contrary to what is stated in the Final Office Action, the prior art fails to teach or suggest “the at least one sensor to create first sensor data by directly measuring one or more physical dimensions of one or more body parts of the user while the item is worn by the user.”

Br. 20. The Examiner determines that Coza describes most of the claim 7 limitations, and that Adeyoola describes measuring via three dimensional depth sensing and Stirling describes measuring one or more physical dimensions of one or more body parts of the user. Final Act. 11–14.

We are persuaded by Appellants' argument that Stirling and Adeyoola fail to describe measuring as recited in the claims. Br. 20–22. The Examiner responds that Stirling describes using sensors in a garment to measure physical dimensions of body parts. Ans. 21. But as Appellant contends, Stirling's measurement is not via three dimensional depth sensing. The only way to do so described in the record is by PrimeSense sensors, and none of the applied references even suggest using such sensors or equivalents. There is no evidence of record that equivalents to PrimeSense sensors existed or that one of ordinary skill would have known of or that there existed other or equivalent ways to measure as recited.

*Claims 14 and 15 rejected under 35 U.S.C. § 103(a) as unpatentable over Coza, Adeyoola, Stirling, and Alten*

These claims depend from those in the preceding rejection.

*Claim 16 rejected under 35 U.S.C. § 103(a) as unpatentable over Coza, Adeyoola, Stirling, and Schwartz*

This claim depends from those in a prior rejection.

### CONCLUSIONS OF LAW

The rejection of claims 1–16 and 20 under 35 U.S.C. § 101 as directed to a judicial exception without significantly more is improper.

The rejection of claims 1–13 and 20 under 35 U.S.C. § 103(a) as unpatentable over Coza, Adeyoola, and Stirling is improper.

The rejection of claims 14 and 15 under 35 U.S.C. § 103(a) as unpatentable over Coza, Adeyoola, Stirling, and Alten is improper.

The rejection of claim 16 under 35 U.S.C. § 103(a) as unpatentable over Coza, Adeyoola, Stirling, and Schwartz is improper.

### CONCLUSION

The rejection of claims 1–16 and 20 is reversed.

In summary:

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
1–16, 20	101	Eligibility		1–16, 20
1–13, 20	103	Coza, Adeyoola, Stirling		1–13, 20
14, 15	103	Coza, Adeyoola, Stirling, Alten		14, 15



Appeal 2019-001605  
Application 13/946,814

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
16	103	Coza, Adeyoola, Stirling, Schwartz		16
<b>Overall Outcome</b>				1-16, 20

REVERSED