

**UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

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*Ex parte* KENNETH W. O'FLAHERTY

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Appeal No. 2004-2232  
Application No. 09/608,496

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ON BRIEF

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Before McQUADE, WARREN, and BARRY, *Administrative Patent Judges*.  
BARRY, *Administrative Patent Judge*.

**DECISION ON APPEAL**

A patent examiner rejected claims 1-45. The appellant appeals therefrom under 35 U.S.C. § 134(a). We reverse.

**BACKGROUND**

The invention at issue on appeal helps a user build predictive models. (Spec. at 1.) According to the appellant, conventional predictive modeling systems are complex. Statistical and data mining skills, including knowledge about the algorithms involved and how they operate, are required to create successful models. Expert knowledge of

the data involved in the prediction and programming skills are also required to manipulate the data into a form acceptable to the predictive modeling systems. Once predictive models have been produced, moreover, they become less effective over time because the behavior they model becomes outdated as time passes and conditions change. (*Id.* at 3.)

In contrast, the appellant asserts that business users who are unfamiliar with data mining can use his Customer Relationship Management system to build predictive models. More specifically, a model-building mechanism in a data mining subsystem is presented with a training segment comprising records with appropriate input attributes and an output attribute to be predicted. The model-building mechanism then builds a model as a business measure that can be applied to make predictions against other like segments. (*Id.*)

A further understanding of the invention can be achieved by reading the following claim.

1. A method for dynamically building predictive models within a computer-implemented business analysis environment, comprising:

(a) generating a definition for a derived measure;

(b) invoking a model-building mechanism in a data mining system based on the generated definition, wherein the model-building mechanism

builds a predictive model that generates an output for the derived measure.

Claims 1-45 stand rejected under 35 U.S.C. § 103(a) as obvious over Sanjay Goil and Alok Choudhary ("Goil"), *A Parallel Scalable Infrastructure for OLAP and Data Mining, Proceedings of Int'l Symp. of Database Engineering Applications* and U.S. Patent No. 5,970,482 ("Pham").

#### OPINION

Rather than reiterate the positions of the examiner or the appellant *in toto*, we focus on the point of contention therebetween. Admitting that "Goil does not teach the predictive model . . . of the present application," (Examiner's Answer at 4), the examiner asserts, "Pham discloses an analogous system wherein an automated and unified data mining system to provide an explicitly predictive knowledge model for analysis (Abstract, lines 1-3 et seq)." (*Id.*) Noting that his "claimed invention. . . recites that the model-building mechanism builds a predictive model that generates output for the derived measure," (Reply Br. at 7), the appellant argues, "[t]his is not taught or suggested by the above portions of Pham." (*Id.*)

In addressing the point of contention, the Board conducts a two-step analysis. First, we construe claims at issue to determine their scope. Second, we determine whether the construed claims would have been obvious.

#### 1. CLAIM CONSTRUCTION

"Analysis begins with a key legal question — *what is the invention claimed?*" *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1567, 1 USPQ2d 1593, 1597 (Fed. Cir. 1987). In answering the question, "[t]he Patent and Trademark Office (PTO) must consider all claim limitations when determining patentability of an invention over the prior art." *In re Lowry*, 32 F.3d 1579, 1582, 32 USPQ2d 1021, 1034 (Fed. Cir. 1994) (citing *In re Gulack*, 703 F.2d 1381, 1385, 217 USPQ 401, 403-04 (Fed. Cir. 1983)).

Here, claim 1 recites in pertinent part the following limitations: "invoking a model-building mechanism in a data mining system based on the generated definition, wherein the model-building mechanism builds a predictive model that generates an output for the derived measure." Claims 16 and 31 recite similar limitations. Considering these limitations, claims 1, 16, and 31 require a model-building mechanism that builds a predictive model that generates an output for a derived measure.

## 2. OBVIOUSNESS DETERMINATION

Having determined what subject matter is being claimed, the next inquiry is whether the subject matter would have been obvious. "In rejecting claims under 35 U.S.C. Section 103, the examiner bears the initial burden of presenting a *prima facie* case of obviousness." *In re Rijckaert*, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993) (citing *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992)). "A *prima facie* case of obviousness is established when the teachings from the prior art itself would appear to have suggested the claimed subject matter to a person of ordinary skill in the art." *In re Bell*, 991 F.2d 781, 783, 26 USPQ2d 1529, 1531 (Fed. Cir. 1993) (quoting *In re Rinehart*, 531 F.2d 1048, 1051, 189 USPQ 143, 147 (CCPA 1976)).

Here, Goil "address[es]: (1) scalability in multi-dimensional systems for OLAP [i.e., On-Line Analytical Processing] and multi-dimensional analysis, (2) integration of data mining with the OLAP framework, and (3) high performance by using parallel processing for OLAP and data mining." Abs., ll. 18-22 (italics omitted). Besides "not teach[ing] the predictive model as depicted in figure 2 of the [appellant's] application," (Examiner's Answer at 4), the examiner has not shown that the reference teaches a model-building mechanism that builds **any** predictive model that generates an output for a derived measure.

For its part, the passage of Pham cited by the examiner mentions that "[a] neuroagent approach is used in an automated and unified data mining system to provide an explicitly predictive knowledge model." Abs., ll. 1-3. "This data mining system permits discovery, evaluation and prediction of the correlative factors of data, i.e., the conjunctions, as corresponding to neuroexpressions (a semantic connection of neuroagents) connected to an output neuroagent which corresponds to the data output, the connection weights yielding the relative significance of these factors to the given output." *Id.* at ll. 6-12. The examiner has not shown, however, that Pham discloses a model-building mechanism that builds a predictive model that generates an output for a derived measure.

Absent a teaching or suggestion of a model-building mechanism that builds a predictive model that generates an output for a derived measure, we are unpersuaded of a *prima facie* case of obviousness. Therefore, we reverse the obviousness rejection of claim 1; of claims 1-15, which depend from claim 1; of claim 16; of claims 17-20, which depend from claim 16; of claim 31; and of claims 32-45, which depend from claim 31.

CONCLUSION

In summary, the rejection of claims 1-45 under § 103(a) is reversed.

REVERSED

JOHN P. McQUADE  
Administrative Patent Judge

CHARLES F. WARREN  
Administrative Patent Judge

LANCE LEONARD BARRY  
Administrative Patent Judge

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