UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte EDWARD S. PLUMER, ROBERT S. GOLIGHTLY,
GRAHAM GAYLARD, and RALPH BRUCE FERGUSON

Appeal 2007-2579
Application 10/441,936
Technology Center 3600

Decided: January 29, 2008

Before WILLIAM F. PATE, III, JENNIFER D. BAHR, and ANTON W. FETTING, *Administrative Patent Judges.*

FETTING, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF CASE

Edward S. Plumer, Robert S. Golightly, Graham Gaylard, and Ralph Bruce Ferguson (Appellants) seek review under 35 U.S.C. § 134 of a Final Rejection of claims 1-5, 7, and 9-47, the only claims pending in the application on appeal.

We have jurisdiction over the appeal pursuant to 35 U.S.C. § 6(b) (2002).

We AFFIRM-IN-PART and REMAND.

The Appellants invented a way for programmatically retrieving input information for a costing system within the enterprise, dynamically updating the costing system in accordance with the retrieved input information to generate an updated costing system, and calculating one or more outputs, wherein the one or more outputs are usable in managing the enterprise (Specification 6:First ¶).

An understanding of the invention can be derived from a reading of exemplary claim 1, reproduced in the Analysis section below.

This appeal arises from the Examiner's Final Rejection, mailed January 13, 2006. The Appellants filed an Appeal Brief in support of the appeal on June 5, 2006. An Examiner's Answer to the Appeal Brief was mailed on September 6, 2006. A Reply Brief was filed on November 3, 2006.

PRIOR ART

The Examiner relies upon the following prior art:

Booth	US 2002/0123945 A1	Sep. 5, 2002
Eder	US 2001/0041995 A1	Nov. 15, 2001
Martin	US 2003/0144932 A1	Jul. 31, 2003
Bruce	US 2002/0049621 A1	Apr. 25, 2002
Hwang	US 2003/0220828 A1	Nov. 27, 2003

Jay S. Holmen, *ABC vs. TOC: It's a matter of time*, 76 Mgmt. Acctng. 37-40 (Jan. 1995)(hereinafter referred to as ABC).

We also discuss the following prior art:

Ayse Pinar Gurses, An Activty-Based Costing and Theory of Contraints Model for Product-Mix Decisions (Thesis submitted to the Faculty of the Virgina Polytechnic Institute and State Univ., Blacksburg, VA, Jun. 29, 1999).[1]

REJECTIONS

Claims 1-4, 7, 9-12, 20, 23, 25-26, 35-45, and 47 stand rejected under 35 U.S.C. § 102(b) as anticipated by Booth.

Claims 13-18 and 46 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Booth.

Claim 5 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Booth and ABC.

Claims 19, 24, and 28-30 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Booth, ABC, and Eder.

Claims 21 and 22 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Booth and Martin.

Claim 27 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Hwang.

Claims 31-34 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Booth and Bruce.

[1]http://scholar.lib.vt.edu/theses/available/etd-070999-111058/unrestricted/thesis.pdf.

ISSUES

The issues pertinent to this appeal are whether the Appellants have sustained their burden of showing that the Examiner erred in the seven rejections, *supra*. The pertinent issues turn on whether the art applied describes various elements in the claims as we describe in the Analysis *infra*, and whether the art applied was properly combined.

FACTS PERTINENT TO THE ISSUES

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

Facts related to Claim Construction

01. The disclosure contains no lexicographic definition of "model."

02. The ordinary and customary meaning of "model" within the context of the claims is a schematic description of a system, theory, or phenomenon that accounts for its known or inferred properties and may be used for further study of its characteristics.[2]

Booth

03. Booth is directed toward a system that enables users to submit cost information from their general ledgers or other sources and to receive cost and performance information related to activities, products, services and customers, preferably derived through a multi-driver cost system, such as activity-based costing (Booth ¶ 0002).

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[2] *American Heritage Dictionary of the English Language* (4th ed. 2000).

04. Companies use cost systems to receive information about their income, expenses, profitability and their overall success. Cost systems operate by apportioning overhead to products and services. Under the traditional cost system, a company chooses a single factor, single allocation basis or single cost driver related to its products or services. The term, "cost driver," as used by Booth, includes any factor or information which (based upon one or more logical, rational or causal relationships) can be used to measure the quantity of one or more activities or resources consumed or used by another activity, a product, a service or a customer. Some typical cost drivers are the amount of direct labor, direct material or tonnage (weight), or the number of units sold (Booth ¶ 0003).

05. Booth's input conversion program may include one or more allocation algorithms which it uses for the input conversion. Each algorithm includes one or more cost drivers and results in the calculation of an allocation quantity. The allocation quantities include factors which are used to apportion general ledger accounts or overheads to certain activities and/or products. Specifically, the allocation algorithms include the appropriate cost drivers necessary to calculate: (a) activity allocation quantities which are associated with a particular general ledger account and type of activity; and (b) product allocation quantities which are associated with a particular activity and type of product (Booth ¶ 0020).

06. By obtaining user-specific data, preferably from the user's on-site database, Booth’s system enables a user to obtain detailed information related to cost and performance, including information related to activities, products, services, customers and opportunities. The system automatically retrieves user-specific data from a user's on-site database, and with this data and the system's standard activity data, generates results for the user. Users can review the results in real-time by accessing the system on a network, and the system can automatically update the data and results for the users. This type of system makes it practical and convenient for users to obtain cost and performance information generated through a multi-driver cost system such as activity-based costing (Booth ¶ 0029).

07. After the user has entered the data, Booth’s system checks for erroneous entries and prompts the user to eliminate any errors. Next, the server will conduct an input data conversion, which puts the data in a format acceptable for model building and build the model. The system generates results which are accessible by the user at any time. The user can then update these results by submitting new data through the interfaces from time to time. In addition, the system can automatically obtain new data from the user's on-site database and generate updated results periodically (Booth ¶ 0060).

08. Booth’s input data conversion involves putting the organization-specific data and activity data associated with the organization in a form which is acceptable for model building.

Input-data conversion may involve allocating general ledger accounts to various activities and various activities to various products, services, customers and other cost objects. Output data conversion relates the activity and product overhead model data to the cost objects of the organization, such as activities, products, services and customers. The data is enhanced and formatted the data coming from the output conversion, adding meaning to the data for the organization by augmenting the data with industry statistics and other information and presenting information in graphs and reports. The system generates results which are accessible by the organization at any time, preferably in real-time. Results may be updated by submitting new data through the interfaces. Alternatively, on a periodic basis, the system can be set up to automatically obtain data from the organization's on-site database and generate new results (Booth ¶ 0064).

09. The implementer of Booth's system creates and classifies the appropriate cost drivers for the organization. The implementer limits the number of cost drivers based upon the balance of accuracy and effort using the 80/20 rule, focusing on identifying simpler cost drivers which approximately quantify how resources and activities are consumed versus relatively complex cost drivers which require a relatively high degree of effort. In one embodiment, this fourth step resulted in thirty-one distinct cost drivers (Booth ¶ 0072).

10. Booth's receiving program sends organization-specific data and standard activity data to an input database from which an input

conversion program converts this data to a format acceptable for Booth's model builder program (Booth ¶ 0079).

11. Booth's input conversion program may include algorithms for allocating general ledger accounts to activities and for allocating activity overheads to cost objects, such as activities, products, services and customers. These allocation algorithms incorporate cost drivers to accomplish this allocation. Certain allocation algorithms incorporate weight factors as well as cost drivers to compensate for atypical activities, scenarios or data. Booth describes allocation algorithms that include an activity weight factor and a resource cost driver quantity. The activity weight factor includes any weight factor related to any activity. The resource cost driver quantity includes any numeric quantity or data which rationally relates to the consumption of one or more resources drivers (Booth ¶ 0083).

12. After the user has entered the data through the interfaces, Booth's system will provide the user with results within approximately one to ten minutes, depending upon the amount of data being processed. The user will then be able to access these results at will, in real time. Booth's website includes options to view the results in different forms, such as graphs, reports and charts. The system can be adapted to provide the user with suggested courses of actions in the areas of business planning, strategy, opportunity, taxes and other useful areas (Booth ¶ 0093).

13. Booth will provide updated results on a monthly, quarterly, annual, or other periodic basis. (Booth ¶ 0094).

14. Booth's system can provide a variety of results which include cost and performance information with a greater degree of accuracy and detail than the information provided by traditional cost systems (Booth ¶ 0093).

ABC

15. ABC is directed toward analyzing the assumptions of activity-based costing (ABC) compared with the assumptions of the theory of constraints (TOC). ABC describes how the cost paradigms are based on different time horizons - ABC has primarily a long-run horizon, while TOC has primarily a short-rum horizon (ABC 1:Abstract).

16. ABC describes a fourth assumption that there are numerous causes for the consumption of resources. Implicit in this assumption is that a wide array of activities can be identified and measured. These activities serve as linkages between the costs of resources and cost objects. The linkages enable multiple cost pools rather than a single cost pool to be used, reflecting a cause-and-effect relationship (ABC 3:Fifth full ¶).

Eder

17. Eder is directed toward evaluating the probable impact of user-specified or system generated changes in business value drivers on the other value drivers, the financial performance and the future value of a commercial enterprise (Eder ¶ 0001).

18. Eder describes how, to provide information that would be useful in improving a business, a valuation would have to furnish supporting detail that would highlight the value of different elements of the business. An operating manager would then be able to use a series of business valuations to identify elements within a business that have been decreasing in value. This information could also be used to identify corrective action programs and to track the progress that these programs have made in increasing business value. This same information could also be used to identify elements that are contributing to an increase in business value. This information could be used to identify elements where increased levels of investment would have a significant favorable impact on the overall health of the business (Eder ¶ 0020).

19. Eder gives the user the ability to track the changes in elements of business value and total business value over time by comparing the current valuation to previously calculated valuations. The detailed valuation also enables simulation of future financial performance based on user-specified or system generated changes in value drivers (Eder ¶ 0030).

20. Operation management systems vary widely depending on the type of company they are supporting. These systems typically have the ability to not only track historical transactions but to forecast future performance, and will generally track information about the performance of the different vendors that supply materials to the firm, and may also be useful for distributors to use

in monitoring the flow of products from a manufacturer. Operation Management Systems in manufacturing firms may also monitor information relating to the production rates and the performance of individual production workers, production lines, work centers, production teams and pieces of production equipment (Eder ¶'s 0070-72).

21. Eder describes the item variables and item performance indicators that drive revenue, expense and changes in capital by element for all defined enterprises, collectively referred to as "value drivers." Eder checks to determine if all enterprise revenue components have "current" drivers and composite variables for all elements. If there are any revenue components without "current" drivers for at least one element, then processing advances to guide the retrieval of information required to specify the next revenue driver model that is being updated. When all item variables have been stored, processing advances (Eder ¶'s 0109-110).

22. Eder describes using a neural net in which evolution and removal of item variables and item performance indicators continue until new parallel populations fail to reach a new target level (Eder ¶ 0122).

23. Eder describes how, if the user has specified changes in value drivers and is seeking to understand the probable impact of these changes on the other value drivers, the financial performance and the future value of the enterprise, then Eder iterates the model as required to ensure the convergence of the frequency distribution of

the output variables. Alternatively, if the user specified a specific level of future financial performance and is seeking a recommendation regarding changes to be made, then the simulation is run in a goal seeking mode (Eder ¶ 0216).

Bruce

24. Bruce is directed toward control of the primary process of an organization in order to achieve the desired goals of the organization. Bruce determines the drivers of the primary process of an organization and the relative effects of the drivers on the primary process so that the drivers can be controlled to achieve desired results. Bruce identifies the primary process flow, the drivers of that process flow, the metrics of the drivers and how the drivers relate to the key performance indicators (KPI's) of an organization so that metric measurements taken around the drivers can be related to the KPI's of the organization. Bruce identifies the process flows of the levels of an organization, the drivers of those process flows, the metrics of the drivers and how the drivers relate to the key performance indicators of the levels of the organization so that metric measurements taken around the drivers can be related to the KPI's of the levels of the organization (Bruce ¶ 0040-43).

25. Bruce compares and analyzes historical report analysis to understand correlations between process drivers and associated business attributes (Bruce ¶ 0054).

26. Bruce's Scheduling Drivers are entity classifications. The entity, (item, project, part, or case), will contain various levels of information, including known outside attributes and historical accumulations encompassing historical profitability, time, and quality KPI's about the current entity type (Bruce ¶ 0194-96).

27. Bruce collects performance metric data, primarily data concerned with time, cost and quality. Such data continuously and automatically collected during an on-going job is useful for evaluating many aspects of a particular job, sub-project or project. For example, the data can be used to identify the best practice or worse practice job within the project, budget estimations, performance and capacity summaries, return on investment and the data can be used over time for trend analysis (Bruce ¶ 0469).

28. All of Bruce's charts available during the time of the process are also available as historical information after the process and particular project of the company is completed (Bruce ¶ 0528).

Knowledge in the Art

29. One of ordinary skill in simulation would have knowledge of operations research, and more particularly that optimization implies the presence of constraints, because the absence of constraints would lead a simulation to simply consume infinite amounts of input.

PRINCIPLES OF LAW

Claim Construction

During examination of a patent application, pending claims are given their broadest reasonable construction consistent with the specification. *In re Prater*, 415 F.2d 1393, 1404-05 (CCPA 1969); *In re Am. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004).

Limitations appearing in the specification but not recited in the claim are not read into the claim. *E-Pass Techs., Inc. v. 3Com Corp.*, 343 F.3d 1364, 1369 (Fed. Cir. 2003) (claims must be interpreted "in view of the specification" without importing limitations from the specification into the claims unnecessarily).

Although a patent applicant is entitled to be his or her own lexicographer of patent claim terms, in *ex parte* prosecution it must be within limits. *In re Corr*, 347 F.2d 578, 580 (CCPA 1965). The applicant must do so by placing such definitions in the specification with sufficient clarity to provide a person of ordinary skill in the art with clear and precise notice of the meaning that is to be construed. *See also In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994) (although an inventor is free to define the specific terms used to describe the invention, this must be done with reasonable clarity, deliberateness, and precision; where an inventor chooses to give terms uncommon meanings, the inventor must set out any uncommon definition in some manner within the patent disclosure so as to give one of ordinary skill in the art notice of the change).

Anticipation

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d

628, 631 (Fed. Cir. 1987). "When a claim covers several structures or compositions, either generically or as alternatives, the claim is deemed anticipated if any of the structures or compositions within the scope of the claim is known in the prior art." *Brown v. 3M*, 265 F.3d 1349, 1351 (Fed. Cir. 2001). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co*., 868 F.2d 1226, 1236 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 832 (Fed. Cir. 1990).

Obviousness

A claimed invention is unpatentable if the differences between it and the prior art are "such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art." 35 U.S.C. § 103(a) (2000); *KSR Int'l v. Teleflex Inc*., 127 S.Ct. 1727, 1729-30 (2007); *Graham v. John Deere Co*., 383 U.S. 1, 13-14 (1966).

In *Graham*, the Court held that that the obviousness analysis is bottomed on several basic factual inquiries: "[(1)] the scope and content of the prior art are to be determined; [(2)] differences between the prior art and the claims at issue are to be ascertained; and [(3)] the level of ordinary skill in the pertinent art resolved." 383 U.S. at 17. *See also KSR Int'l v. Teleflex Inc*., 127 S.Ct. at 1734. "The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *KSR*, at 1739.

"When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or [in] a different one. If a person of ordinary skill [in the art] can implement a predictable variation, § 103 likely bars its patentability." *Id*. at 1740.

"For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill." *Id.*

"Under the correct analysis, any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed." *Id.* at 1742.

ANALYSIS

Claims 1-4, 7, 9-12, 20, 23, 25-26, 35-45, and 47 rejected under 35 U.S.C. § 102(b) as anticipated by Booth.

Claim 1

The Appellants argue claims 1, 2, 3, 4, 7, 12, 20, 25, 35, 36, 37, 38, 39, 40, 43, 44, 45, and 47 as a group.

Accordingly, we select claim 1 as representative of the group. 37 C.F.R. § 41.37(c)(1)(vii) (2007).

Claim 1 is reproduced below, showing how the Examiner applied Booth. [bracketed matter and some paragraphing added].

1. A computer-implemented method for performing dynamic cost accounting for an enterprise; wherein the enterprise comprises a costing system, the method comprising:

[1] programmatically retrieving input information for the costing system,

wherein the costing system comprises one or more cost models,

wherein each of said one or more cost models comprises one or more parameters, and

wherein said one or more parameters comprises a model; [Booth ¶ 0079]

[2] dynamically updating the costing system in accordance with the retrieved input information to generate an updated costing system,

wherein said updating the costing system comprises modifying at least one of said one or more parameters based on the retrieved input information; [Booth ¶'s 0026, 0028, and 0102] and

[3] the updated costing system calculating one or more outputs, wherein the one or more outputs are usable in managing the enterprise [Booth ¶ 0093].

(Answer 3-4).

The Appellants contend that Booth fails to describe a hierarchical model structure containing a model that contains another model (Br. 9-10). Booth ¶ 0079 cited by the Examiner describes sending organization-specific data and standard activity data and converting this data to a model builder program format. The Appellants argue that Booth's having one model feed data to another model is not the same as the one model containing the other model (Br. 9: Last full ¶).

We must first construe the limitation "model", which is undefined in the Specification (FF 01). The customary meaning in the context of data processing is a schematic description of a system, theory, or phenomenon that accounts for its known or inferred properties and may be used for further study of its characteristics (FF 02). Thus we construe a model to be something that provides a description accounting for properties that may be used for further study. The claim limitation [1] then requires that each of one or more descriptions of cost that account for properties comprises one or more parameters, which comprise a description accounting for properties that may be used for further study.

We first point out that claim 1 does not recite a hierarchical model as contended by the Appellants. We take the Appellants' reference to hierarchical models as meaning the specific relationship of containment between models recited in claim 1. While we agree with the Appellants that sending data does not confer the property of containing a model, we find that changing the format of data to adapt to an automated process may confer that property, and as practiced by Booth does confer that property.

Booth ¶ 0079 describes converting organization-specific data and standard activity (cost) data, data that clearly describe properties of an organization accounting for its activities, to a format acceptable for Booth's model builder program (FF 10). The reformatted data, which still describes organizational activity properties, now contains format data that account for properties of the model builder program that may be used for further study by the model builder program. Thus, Booth's formatted data are that of an organizational cost model containing a data analysis formatting model.

Additionally, Booth describes this input-data conversion as also allocating general ledger accounts to various activities and various activities to various products, services, customers and other cost objects (FF 05 & 08). This describes the input data as comprising representations of activities within representations of financial accounts.

Claims 9-11

Claims 9-11 add limitations of modifying coefficients of at least one consumption propagation models (claim 9); replacing a consumption propagation model (claim 10); and adding a new consumption propagation model to a consumption propagation model (claim 11). The Examiner cited for her findings (Answer 5) Booth ¶ 0083, which refers to a resource cost driver quantity coefficient that includes any numeric quantity or data which rationally relates to the consumption of one or more resources drivers in allocation algorithms that may be added or modified (FF 11).

The Appellants repeat their contention from claim 1 that Booth fails to describe models containing models, and further contend that Booth describes automobile product models, not consumption models (Br. 11-13: Claims 9, 10, and 11). We found that Booth does describe models containing models for claim 1, *supra*. We are unable to find any reference to automobiles in Booth other than as examples in figures such as 12A and B, and 36-43. The text in Booth refers to cost models, not automobile models (FF 05) and therefore we find the argument that Booth refers to automobile models unpersuasive.

Claims 23 and 26

Claims 23 and 26 add limitations of aggregating at least a subset of said plurality of cost models into a single model (claim 23); and substantially real-time input information with outputs indicating how costs vary as a function of resource consumption in the context of current operating conditions of the enterprise (claim 26). The Examiner cited for her findings for claims 4 and 23 (Answer 4) Booth ¶ 0016, 18, and 64, which refers to aggregating by allocating general ledger accounts to various activities and various activities to various products, services, customers and other cost objects (FF10). The Examiner cited for her findings for claim 26 Booth ¶ 0029, which refers to real time results viewing and indicating how costs and performance vary as a function of resource consumption, such as those related to activities, products, services, and customers, in the context of current operating conditions of the enterprise (FF 06).

The Appellants contend that the Examiner failed to make findings regarding claim 23, and that real time viewing is not real time input (Br. 13: Claims 23 and 26). We found that the Examiner did make findings regarding how Booth describes claim 23, *supra*. While we agree that output is not input, the timeliness of output does imply characteristics regarding timeliness of input. In particular, the pace of output cannot be faster than input. Therefore, Booth's real time result viewing implies real time data input. We find that the Specification does not define a specific rate of speed or timeliness constituting real time, and thus what is real time is determined within the context within which it is measured. The Appellants further argue that Booth's use of a database for input negates real time input, but we find that whether a process uses a data storage element in its input stream does not necessarily reduce the timeliness of input.

Claims 41 and 42

Claims 41 and 42 add limitations of optimizers operating in conjunction with the activity-based cost accounting system to provide estimated financial metrics for plans, and selecting and outputting an optimal plan (claim 41); and implementing the optimal plan, monitoring input information, retrieving an input element whose change exceeds a threshold, retrieving said element and dynamically updating the costing system in accordance with the retrieved element (claim 42). The Examiner cited Booth's abstract and ¶¶ 0010 and 93 for claims 41 and 42 (Answer 8-9) for her findings. Booth's abstract and ¶¶ 0010 and 93 refer to using financial reports, which would inherently include metrics.

The Appellants contend that Booth fails to mention optimizers at all. We agree. In a rejection based on novelty, all elements must be described within the art applied. Appellants' argument that Booth lacks any description regarding optimizers thus establishes that the Examiner erred in rejecting claims 41 and 42 for anticipation.

The Appellants have sustained their burden with respect to claims 41 and 42 of showing that the Examiner erred, but have not sustained their burden of showing that the Examiner erred in rejecting claims 1-4, 7, 9-12, 20, 23, 25-26, 35-40, 43-45, and 47 under 35 U.S.C. § 102(b) as anticipated by Booth.

Claim 5 rejected under 35 U.S.C. § 103(a) as unpatentable over Booth and ABC.

Claim 5 adds the limitation that a cost model comprises two or more cost pools connected by linkages; and updating the costing system comprises modifying at least one of the linkages based on retrieved input data. The Examiner cited ABC for her findings for this limitation (Answer 11-12). The Appellants contend that the linkages cited in ABC are not between cost pools in a single model, but between costs of resources and cost objects and that no proper motivation to combine ABC with Booth has been shown (Br. 16: Claim 5).

We find that ABC does explicitly state that activity linkages are between the costs of resources and cost objects (FF 16). The Examiner has not shown linkages between cost pools as claimed. The Appellants have sustained their burden of showing that the Examiner erred in rejecting claim 5 under 35 U.S.C. § 103(a) as unpatentable over Booth and ABC.

Claims 13-18 and 46 rejected under 35 U.S.C. § 103(a) as unpatentable over Booth.

The Appellants separately argue each of claims 13-18, which add the specific retrieving and updating timing limitations of weekly, daily, hourly, by minute, by second, and by millisecond. The Examiner cites Booth ¶¶ 0029, 93 and 96, which describe real time reviewing of results and providing results with greater accuracy and detail (FF 06, 12, & 14). The Examiner apparently meant to cite ¶ 0094, describing updating on a monthly, quarterly, annual or other periodic basis (FF 13). The Appellants contend that Booth fails to describe these specific timing metrics. The Appellants contend that claim 46 is patentable for the same reason as its parent claim 43 (Br. 17-23:Third Ground of Rejection).

We find that Booth's description of updating on a monthly, quarterly, annual or other periodic basis suggests, particularly in view of Booth's description of real time review, updating on any time frame that makes sense in the context of modeling business costs. We find that one of ordinary skill would have known that business processes may recur on weekly, daily, hourly, by minute, by second, and by millisecond cycles and thus would have been predictable cycles for updating Booth's system.

As to claim 46, since we found the Appellants failed to show error in the rejection of claim 43, *supra*, the Appellants' argument based on the patentability of claim 43 is unpersuasive.

The Appellants have not sustained their burden of showing that the Examiner erred in rejecting claims 13-18 and 46 under 35 U.S.C. § 103(a) as unpatentable over Booth.

Claims 19, 24, and 28-30 rejected under 35 U.S.C. § 103(a) as unpatentable over Booth, ABC, and Eder.

Claim 19

Claim 19 adds the limitation that the step of retrieving input information monitors input information, and if a value or change in value in an element of the input information matches one or more criteria, retrieving the element, and updating the costing system with the retrieved element. The Examiner cited for her findings Eder ¶¶ 0020, 0070-72, and 0110, describing the monitoring information concerning elements that affect business value, referred to as value drivers, and retrieving and updating drivers that are not current (FF 18, 20, & 21).

The Appellants contend that Eder's reference to "value" refers to business value, not a numeric value (Br. 25: First full ¶), and Eder's detection, retrieval and updating refer to drivers rather than input information (Br. 25: Second full ¶). The Appellants also argue the absence of motivation to combine Booth, ABC and Eder (Br. 25: Bottom ¶).

Eder's value drivers are item variables and item performance indicators that drive revenue, expense and changes in capital by element (FF 21). Eder monitors information regarding these drivers, which means monitoring the numeric values of those drivers, since all measurable accounting information within a computer system is numeric. Eder's reference to the data as representing the value of a business does not diminish the numeric character of the data.

The Appellants' argument regarding drivers fails to consider that both their claimed invention and Eder contain model information within the input information, and Eder's drivers are part of its model. The fact that Eder checks for current drivers means that Eder checks to see that the input data for those drivers provide current measures of the effectiveness of those drivers within Eder's model, such as information relating to the production rates and the performance of individual production workers, production lines, work centers, production teams and pieces of production equipment (FF 20).

As to the motivation to combine the art applied, one of ordinary skill would see the applicability of ABC toward Booth for ABC's description of the factors underlying Booth's activity based costing assumptions (FF 15) that must be considered to effectively apply Booth's activity based costing (FF 03). One of ordinary skill would see the predictive and prescriptive cost system of Eder (FF 17 & 18) as providing more effective use of Booth's costing system.

Claim 24

Claim 24 adds the limitation of a prediction model that outputs to the input information, and the costing system is operable to calculate predictive costing information for the enterprise based on outputs of the prediction model. The Examiner cited Eder's abstract and Figs. 9A-C for her findings.

The Appellants argue the absence of motivation to combine Booth, ABC and Eder (Br. 26: Claim 24). We find that the motivation to combine is the same as that we found for claim 19, *supra*.

Claims 28-30

Claims 28-30 add the limitations of optimizers to evaluate plans, providing estimated financial metrics for each of the plurality of plans, selecting and outputting an optimal plan indicating optimal operations for an enterprise, based on one or more constraints and objectives (claim 28); monitoring input information, and if a change in an input element exceeds a threshold, retrieving said element, dynamically updating the costing system in accordance with the retrieved element, providing the outputs, along with objectives and constraints, to an optimizer, and executing optimizers in response (claim 29); and implementing the optimal operating parameters in the enterprise (claim 30).

The Examiner cited for her findings Eder's ¶¶ 0030, 122, and 216, which describe using financial metrics in plans run under simulation to achieve optimal results (FF 19, 22, & 23). The Appellants argue that Eder runs unconstrained optimization, monitors for missing elements instead of exceeding a threshold, and the absence of motivation to combine Booth, ABC and Eder (Br. 26-28: Claim 28 and Claims 29, 30).

We find that Eder describes a predictive model of a business (FF 18). Any predictive model of a business must include some of the constraints under which the business operates for the purpose of predicting behavior under the environment that is modeled, any realistic business environment including constraints. Further, one of ordinary skill would know that optimization implies the presence of constraints, for otherwise a simulation would simply consume infinite amounts of input (FF 29). We find that the motivation to combine is the same as that we found for claim 19, *supra*. We further find that Eder describes retrieving and updating model drivers that are not current (FF 21). The attribute of being current acts as a threshold for such retrieval and updating. We find that the motivation to combine is the same as that we found for claim 19, *supra*.

The Appellants have not sustained their burden of showing that the Examiner erred in rejecting claims 19, 24, and 28-30 under 35 U.S.C. § 103(a) as unpatentable over Booth, ABC, and Eder.

Claims 21 and 22 rejected under 35 U.S.C. § 103(a) as unpatentable over Booth and Martin.

The Appellants argue that claims 21 and 22 are patentable for the same reason as claim 1 (Br. 28). Since the Appellants have not sustained their burden with respect to claim 1, they have similarly not sustained their burden of showing that the Examiner erred in rejecting claims 21 and 22 under 35 U.S.C. § 103(a) as unpatentable over Booth and Martin.

Claim 27 rejected under 35 U.S.C. § 103(a) as unpatentable over Hwang.

The Examiner cited Hwang for her findings in this rejection. In contending that the Examiner erred in rejecting claim 27 under 35 U.S.C. § 103(a) as unpatentable over Hwang, the Appellants raise the issue of overcoming Hwang as a prior art reference under 35 U.S.C. § 103(c) for the first time in the Appeal Brief (Br. 29). Prior to filing the Appeal Brief, the Appellants had relied on the patentability of claim 1 to argue for the patentability of Hwang.

The Appellants have not shown in their Brief that they put the common ownership evidence required to support this argument before the Examiner to consider.

The Examiner also suggested that claim 27 may be obvious over Booth, but did not make a rejection over Booth (Answer 16).

Thus, we remand the rejection of claim 27 presented in this appeal back to the Examiner to consider whatever common ownership evidence may be in the record to support this contention, and if the evidence is sufficient to overcome Hwang as a reference, then to consider whether a rejection over Booth is proper.

Claims 31-34 rejected under 35 U.S.C. § 103(a) as unpatentable over Booth and Bruce.

Claims 31-34 add the limitations of substantially real-time input information indicating substantially current operating conditions, outputs indicating substantially current costs, computing a performance metric based on updated outputs that provides a measure of efficiency for the enterprise (claim 30); the performance metric comprising a key performance indicator (KPI) for the enterprise that indicates financial performance of the enterprise (claim 32); input information comprising parameters of a business process (claim 33); and the input information for the costing system comprising state information regarding a system or process, and updating a state model and calculating outputs by calculating one or more state costs related to the system or process (claim 34).

The Examiner cited for her findings Bruce ¶¶ 0196, 0469, 0054, and 0528, which describe the use of KPI’s in cost systems (FF 25 - 29). The

Appellants repeat their contention that Booth fails to show input data in real time (Br. 29: Bottom ¶ - 30: Top ¶), and further contend that Bruce fails to describe computing a performance metric for the enterprise (Br. 30:Second ¶); that there is no motivation to combine Bruce with Booth (Br. 31:Top ¶); and that Bruce fails to describe state information and updating a state model (Br. 31: Second to last ¶).

We found in our analysis of claim 1, *supra*, that Booth describes real time input within the context of Booth's system. We find that Bruce describes computing primary process flow, the drivers of that process flow, the metrics of the drivers and how the drivers relate to the key performance indicators (KPI's) of an organization (FF 24), and therefore describes process flows as state information and computing key performance indicators as performance metrics. Bruce describes continuously and automatically collecting data during an on-going job for evaluating many aspects of a particular job, sub-project or project. The internal representation within Bruce's system of a job may be characterized as a state model for the state of that job.

We further find that Bruce, being directed toward controlling primary process of an organization in order to achieve the desired goals of the organization by determining the drivers of the primary process of an organization and the relative effects of the drivers on the primary process so that the drivers can be controlled to achieve desired results (FF 24), would require a cost system that supplies driver information such as that of Booth (FF 03). Thus, one of ordinary skill would have applied Booth's cost data system as an input source for Bruce.

The Appellants have not sustained their burden of showing that the Examiner erred in rejecting claims 31-34 under 35 U.S.C. § 103(a) as unpatentable over Booth and Bruce.

CONCLUSIONS OF LAW

The Appellants have not sustained their burden of showing that the Examiner erred in rejecting claims 1-4, 7, 9-12, 20, 23, 25-26, 35-40, 43-45, and 47 under 35 U.S.C. § 102(b) as anticipated by Booth, and claims 13-19, 21, 22, 24, 28-34, and 46 under 35 U.S.C. § 103(a) as unpatentable over the prior art.

The Appellants have sustained their burden of showing that the Examiner erred in rejecting claims 41 and 42 under 35 U.S.C. § 102(b) as anticipated by Booth, and claim 5 under 35 U.S.C. § 103(a) as unpatentable over the prior art.

The record is insufficient to reach a conclusion as to whether the Appellants have sustained their burden of showing that the Examiner erred in rejecting claim 27 under 35 U.S.C. § 103(a) as unpatentable over the prior art, and the rejection of this claim is remanded to the Examiner.

REMAND

We remand this application to the Examiner pursuant to 37 C.F.R. § 41.50(a)(1) to consider:

- . Whether claims 41 and 42, whose anticipation under Booth rejection we did not sustain because Booth failed to show optimizers, should be rejected under 35 U.S.C. § 103 as unpatentable over Booth and Eder, since Eder does, as we found *supra*, describe optimizers.

- Whether claim 5, whose obviousness rejection based on Booth and ABC we did not sustain because ABC failed to show cost pools connected by linkages, should be rejected as obvious over Booth and Gurses. Gurses describes an industry definition of a cost pool as a "grouping of all cost elements associated with one activity" (Gurses 9:First ¶), describes activity maps as focusing on linkages of resources (Gurses 39: Second ¶ , Item 2), and describes linkages between activities (Gurses 42: Second ¶)). The Examiner should consider particularly whether such linkages between activities implies linkages between cost pools in view of the industry definition described in Gurses.

- Whether claim 27, whose obviousness rejection over Hwang we remanded to the Examiner because the Appellants failed to show they presented the evidence necessary to overcome Hwang under 35 U.S.C. § 103(c), is obvious over Booth as suggested by the Examiner (Answer 38), but not put forth in a rejection by the Examiner. The Examiner should also consider whether the Appellants' evidence of common ownership is sufficient to overcome Hwang as prior art under 35 U.S.C. § 103(c).

DECISION

To summarize, our decision is as follows:

- The rejection of claims 1-4, 7, 9-12, 20, 23, 25-26, 35-40, 43-45, and 47 under 35 U.S.C. § 102(b) as anticipated by Booth is sustained.

- The rejection of claims 41 and 42 under 35 U.S.C. § 102(b) as anticipated by Booth is not sustained.

- The rejection of claim 5 under 35 U.S.C. § 103(a) as unpatentable over Booth and ABC is not sustained.

- The rejection of claims 13-18 and 46 under 35 U.S.C. § 103(a) as unpatentable over Booth is sustained.

- The rejection of claims 19, 24, and 28-30 under 35 U.S.C. § 103(a) as unpatentable over Booth, ABC, and Eder is sustained.

- The rejection of claims 21 and 22 under 35 U.S.C. § 103(a) as unpatentable over Booth and Martin is sustained.

- The rejection of claim 27 under 35 U.S.C. § 103(a) as unpatentable over Hwang is remanded to the Examiner.

- The rejection of claims 31-34 under 35 U.S.C. § 103(a) as unpatentable over Booth and Bruce is sustained.

- The application is remanded to the Examiner to consider whether claims 5, 27, 41, and 42 should be rejected under alternate grounds as cited in the REMAND, *supra*.

- The application is remanded to the Examiner to consider whether the record contains evidence of common ownership sufficient to overcome Hwang as a prior art reference under 35 U.S.C. § 103(c).

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) (2007).

<u>AFFIRMED-IN-PART and REMANDED</u>

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