

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Life Technologies Corporation,

Petitioner

v.

Unisone Strategic IP

Patent Owner

CBM2015-_____

Patent 6,996,538

**PETITION UNDER 35 U.S.C. § 321 AND § 18 OF
THE LEAHY-SMITH AMERICA INVENTS ACT**

**TRANSITIONAL PROGRAM FOR
COVERED BUSINESS METHOD PATENTS**

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TABLE OF CONTENTS

I.	Preliminary Statement	1
II.	Mandatory Notices Under 37 C.F.R. § 42.8(b)	4
	A. Real Party in Interest	4
	B. Related Matters	4
	C. Lead and Back-Up Counsel	5
	D. Service Information	5
III.	Payment of Fees	5
IV.	Grounds for Standing - 37 C.F.R. § 42.304(a)	6
	A. At Least One Challenged Claim Is Unpatentable	6
	B. Claims 52, 62, 67, 70–76, 81, 83–85, and 96 Are Directed To a Covered Business Method - 37 C.F.R. § 42.304(a)	6
	C. Claims 52, 62, 67, 70–76, 81, 83–85, and 96 Are Not Directed To a “Technological Invention”	10
	D. Petitioner Has Been Sued for Infringement of This Patent	13
V.	Identification of Challenge - 37 C.F.R. § 42.304(b)	13
	A. Claims for Which Review Is Requested - 37 C.F.R. § 42.304(b)(1)	13
	B. Statutory Grounds of Challenge - 37 C.F.R. § 42.304(b)(2)	14
VI.	Factual Background	14
	A. Declaration of Michael Siegel, Ph.D.	14
	B. Background of Inventory Management	14
VII.	Claim Construction - 37 C.F.R. § 42.304(b)(3)	19
	A. Broadest Reasonable Interpretation	19
	1. Specification Support for Constructions	20
VIII.	The ‘538 Patent	24
IX.	Claims 52, 62, 67, 70–76, 81, 83–85, and 96 of The ‘538 Patent Recite Patent-Ineligible Subject Matter Under 35 U.S.C. § 101	24

A. <i>Alice’s</i> Step One: Claims 52, 62, 67, 70–76, 81, 83–85, and 96 Recite an Abstract Idea	25
B. <i>Alice’s</i> Step Two: Claims 52, 62, 67, 70–76, 81, 83–85, And 96 Do Not Contain an Inventive Concept To Transform The Abstract Idea Into a Patent-Eligible Application.....	26
1. Claims 67 and 70-76.....	28
a) Claims 67 and 70-76 Fail the Generic Computer Test	30
b) Claims 67 and 70-76 Fail the Mental Steps Test	39
c) Claims 67 and 70-76 Fail the Machine-or-Transformation Test.....	42
d) Claims 67 and 70-76 Fail the Point-of-Novelty Test	44
e) Claims 67 and 70-76 Fail the Abstract Idea Test.....	46
2. Claims 52 and 62	47
a) Claims 52 and 62 Fail the Generic Computer Test.....	50
b) Claims 52 and 62 Fail the Mental Steps Test	51
c) Claims 52 and 62 Fail the Machine-or-Transformation Test	52
d) Claims 52 and 62 Fail the Point-of-Novelty Test.....	52
e) Claims 52 and 62 Fail the Abstract Idea Test	53
3. Claims 81, 83-85, and 96.....	53
a) Claims 83-85 and 96.....	55
b) Claim 81 Fails the Generic Computer Test	55
c) Claim 81 Fails the Mental Steps Test.....	56
d) Claim 81 Fails the Machine-or-Transformation Test.....	56
e) Claim 81 Fails the Point-of-Novelty Test	56
f) Claim 81 Fails the Abstract Idea Test.....	57
X. Conclusion	57

I. Preliminary Statement

Despite the lofty goals set forth in the description of U.S. Patent No. 6,996,538 (the ‘538 Patent) (Ex. 1001), the claims of the ‘538 patent recite little more than the patent-ineligible abstract idea of inventory management. See Ex. 1008, p. 33, cl. 67. Petitioner therefore challenges ‘538 Patent claims 52, 62, 67, 70–76, 81, 83–85, and 96 under 35 U.S.C. § 101 and requests cancellation of those claims.

The claims of the ‘538 patent simply recite a generic computer implementation of an abstract idea, subject matter that is not patent eligible as recently confirmed by the Supreme Court. *Alice Corp. v. CLS Bank*, 573 U.S. ___, slip op., at 13 (2014). The ‘538 Patent purports to describe a vendor managed inventory (“VMI”) system that provides services for multiple companies so as to increase buying power and negotiate better deals. Ex. 1001, 1:46:52. Further, the patent mentions allowing third-parties to monitor company inventory via the Internet using web-enabled technologies. Ex. 1001, 1:53-65. The ‘538 Patent’s claims, however, are much more abstract, reciting nothing more than the generic computer implementation of the abstract idea of inventory-management. Ex. 1006, ¶ 31-32.

The patent does not describe, nor do the claims require, any specialized software or hardware. Instead, the patent provides a generic technical description

using conventional machines and conventional software, and the claims are even more abstract. For example, claim 67 recites an inventory management method that simply requires (a) collecting and storing various inventory-related information from more than one entity in a database, (b) evaluating the customer inventory information, (c) ordering inventory, (d) tracking inventory, (e) updating the data, and (f) providing access to the information. Such steps are completely subsumed by the abstract idea of inventory management. Moreover, the underlying process of each step can be performed manually, using a pen and paper. Taking an abstract idea and saying “apply it” to a computer – like the claims of ‘538 patent do here – does not create patent-eligible subject matter. *Mayo v. Prometheus*, 132 S. Ct. 1289, 1290 (2012).

The ‘538 Patent qualifies for this proceeding because it is a “covered business method” (“CBM”) patent. In initial examination in the USPTO, the ‘538 patent was classified as belonging to class 705 (Data Processing: Financial, Business Practice, Management, or Cost/Price Determination). Patents in this class are the very focus of § 18 of the Leahy-Smith “America Inventors Act” (“AIA”). *See* Ex. 1002, p. 48739; *see also* Ex. 1003. The USPTO has been empowered by Congress to use *all* statutory grounds to review these patents, which the Supreme Court in *Bilski v. Kappos* has characterized as being too abstract to be patentable. *See* AIA § 18.

The ‘538 Patent does not fit within the category of “technological inventions” that are excluded from the definition of a CBM. To be considered a “technological invention,” the claimed subject matter as a whole must recite a technological feature that is novel and unobvious over the prior art; and solves a technical problem using a technical solution. A patent, such as the ‘538 Patent, that merely recites a long-known business process with limited use of conventional technology is not considered a technological invention. The ‘538 Patent claims are drawn to the abstract business process of inventory management, and nothing more. It certainly does not meet the requirements of a “technological invention.”

Petitioner challenges the following subset of the ‘538 Patent claims under 35 U.S.C. § 101: claim nos. 52, 62, 67, 70–76, 81, 83–85, and 96. These claims recite, at best, generic computer implementation of the abstract idea of inventory management and fail all of the prevailing tests for patentable subject matter.

This Petition is supported by the declaration of Michael Siegel, Ph.D. Dr. Siegel is a Principal Research Scientist at MIT’s Sloan School of Management with over 25 years of experience in finance-related and business-related computer systems. Ex. 1006.

II. Mandatory Notices Under 37 C.F.R. § 42.8(b)

A. Real Party in Interest

Pursuant to 37 C.F.R. § 42.8(b)(1), the Petitioner certifies that Thermo Fisher Scientific Inc. and Life Technologies Corporation are the real parties in interest. The Petitioner, Life Technologies Corporation, is an indirectly, wholly owned subsidiary of Thermo Fisher Scientific Inc. Thermo Fisher Scientific Inc. and Life Technologies Corporation both controlled and financed the filing of this petition, and are therefore the real parties in interest.

The Petitioner is Life Technologies Corporation (“Life”), a wholly owned subsidiary of Thermo Fisher Scientific Inc. (“Thermo Fisher”). Thermo Fisher is a large multinational company with over 50,000 employees in 50 countries whose mission is to “enable our customers to make the world healthier, cleaner and safer.” See <http://www.thermofisher.com/en/home.html> (“About Thermo Fisher Scientific”). The Patent Owner, Unisone Strategic IP, Inc. (“Unisone”), on the other hand, is a patent holding company with no discernible employees or products that has sued Life as well as its customers. Ex. 1005, p. 2.

B. Related Matters

Pursuant to 37 C.F.R. § 42.8(b)(2), the ‘538 Patent has been asserted in the following litigations:

- Unisone v. TraceLink, Inc., CASD, 3-13-cv-01743, July 25, 2013.

- *Unisone v. Life Tech., et al.*, CASD, 3-13-cv-01278, June 3, 2013 (Ex. 1005).

C. Lead and Back-Up Counsel

Pursuant to 37 C.F.R. § 42.8(b)(3), Petitioner provides the following designation of counsel: Lead counsel is Michael L. Kiklis (Reg. No. 38,939) and back-up counsel is Katherine D. Cappaert (Reg. No. 71,639).

D. Service Information

Pursuant to 37 C.F.R. § 42.8(b)(4), papers concerning this matter should be served in accordance with the following:

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III. Payment of Fees

The undersigned authorizes the Office to charge the fee required by 37 C.F.R. § 42.15(b) for this Petition for covered business method patent review to Deposit Account No. 15-0030. Any additional fees that might be due are also authorized.

IV. Grounds for Standing - 37 C.F.R. § 42.304(a)

A. At Least One Challenged Claim Is Unpatentable

As further detailed below, claims 52, 62, 67, 70–76, 81, 83–85, and 96 of the ‘538 Patent are unpatentable under 35 U.S.C. § 101 as reciting patent-ineligible subject matter. Thus, for the reasons discussed *infra*, it is “more likely than not that at least one of the claims challenged in the petition is unpatentable.” 35 U.S.C. § 324(a).

B. Claims 52, 62, 67, 70–76, 81, 83–85, and 96 Are Directed To a Covered Business Method - 37 C.F.R. § 42.304(a)

The ‘538 Patent is eligible for CBM review because it claims an inventory management process that has been in existence as long as products have been sold. The ‘538 Patent is directed to a financial-related and sales-related system that qualifies for CBM review by its very nature – facilitating product sales. The USPTO has previously considered this point when first examining the application that led to the ‘538 Patent and classified the ‘538 Patent in class 705 (Data Processing: Financial, Business Practice, Management, or Cost/Price Determination). Moreover, as discussed *infra*, the claims of the ‘538 Patent are directed to methods and computer systems for activities that are financial in nature, i.e., inventory management to support product sales, including customer interfaces and data management related thereto, as well as tracking and storing cost information related to those products. Ex. 1006, ¶ 35.

The AIA defines a CBM patent as “a patent that claims a method or corresponding apparatus for performing data processing or other operations used in the practice, administration, or management of a financial product or service[.]” AIA § 18(d)(1); *see also* 37 C.F.R. § 42.301. The USPTO noted that the AIA’s legislative history demonstrates that “financial product or service” should be “interpreted broadly,” as encompassing patents “claiming **activities that are financial in nature**, incidental to a financial activity or complementary to a financial activity.” Ex. 1002, p. 48735 (emphasis added). Moreover, the USPTO instructs that the language “practice, administration, or management” is “intended to cover any **ancillary activities** related to a financial product or service, **including** . . . marketing, **customer interfaces** [and] **management of data**[.]” Ex. 1004, pp. 635-36 (emphasis added). “The phrase ‘method or corresponding apparatus’ is intended to encompass, but not be limited to, any type of claim contained in a patent, including, method claims, system claims, apparatus claims . . . and set of instructions on storage media claims.” Ex. 1004, p. 638. Finally, “patents subject to covered business method patent review are anticipated to be typically classifiable in Class 705.” Ex. 1002, p. 48739.

The ‘538 patent is classified in class 705 and requires “[a] method for **inventory management**,” “collecting and storing . . . inventory and **cost information** . . . including: a product identifier and a number of items in

manufacturer, supplier or distributor inventory,” “evaluating . . . inventory and **cost information**,” “ordering . . . inventory,” “tracking inventory . . . **as inventory items are added to, restocked to, or removed from said inventories.**” Ex. 1008, pp. 33, cl. 67 (emphasis added); see also Ex. 1008, pp. 33-34, cls. 52, 81. Also, claims 62 and 96 require “wherein said client software allows users to specify a **price for goods for sale** within an inventory.” Ex. 1001, cls. 62, 96 (emphasis added). These recitations cover inventory management to support a sales function, which is an activity that is necessarily financial in nature. Ex. 1006, ¶ 35.

Moreover, the ‘538 Patent’s specification makes clear that it is a Covered Business Method Patent. For example, the patent recognizes that purchasing is a large part of inventory maintenance:

While purchasing is a large part of inventory maintenance, the present invention may also facilitate other transactions as well. For example, the present invention may allow customers to resell products or equipment to other businesses, thereby maximizing utility. . . . The present invention provides a forum through which resellers and customers may interact, where the present invention acts as a broker, thereby assuring both that purchased equipment is delivered, and that a seller receives proper compensation. Ex. 1001, 2:7-19 (emphasis added).

And, the ‘538 Patent’s inventory consists of products, which are items for sale:

Products--Items for sale via the present invention.

Customer Inventory--A list of products to be maintained at a given customer site. Ex. 1001, 6:7-9.

The patent also describes providing services that facilitate the reselling of products:

Application Server 240 may also monitor inventory levels reflected in Database Server 230, contact vendors based on information from Database Server 230, adjust inventory information as new inventory is received, and provide the services necessary to facilitate business-to-business resale of equipment or products stored in Database Server 230. Ex. 1001, 5:31-36.

Moreover, the '538 Patent stores various financial-related information, such as UNIT_PRICE and UNIT_TAX, to facilitate product sales:

Column (field) Name	Description	Comment
INTERNAL_INVOICE_ID	Identifier for internal invoice no	
INTERNAL_INVOICE_LINE_NUMBER	Line number for internal invoice	Together with Internal Invoice identifier, forms unique key
SHIPPED_PRODUCT	Product shipped	
SHIP_QUANTITY	Quantity shipped	
UNIT_PRICE	Supplier's Unit price	
UNIT_TAX	Sales Tax (if any)	
EXTENDED_PRICE	Value = Ship_qty * Unit_Price	Product only subtotal
LINE_TAX_TOTAL	Value = Ship_Qty * Unit_Tax	
LINE_TOTAL_AMOUNT	EXTENDED_PRICE + Line_Tax_total	

Ex. 1001, 29:35-54.

The '538 Patent is therefore a covered business method patent.

C. Claims 52, 62, 67, 70–76, 81, 83–85, and 96 Are Not Directed To a “Technological Invention”

The ‘538 patent does not cover a “technological invention” because the claims (1) fail to recite a novel and unobvious technological feature; *and* (2) fail to recite a technical solution that solves a technical problem.

The AIA excludes “patents for technological inventions” from the definition of CBM patents. AIA § 18(d)(2). To determine what constitutes a patent for a technological invention, “the following will be considered on a case-by-case basis: whether the claimed subject matter as a whole recites a technological feature that is novel and unobvious over the prior art; and solves a technical problem using a technical solution.” 37 C.F.R. § 42.301. To qualify as a technological invention, a patent must have a novel, unobvious technological feature *and* solve a technical problem with a technical solution. *See* Ex. 1002, pp. 48735-36. The ‘538 Patent satisfies neither prong. Moreover, to institute a CBM post-grant review, a patent need only have *one* claim directed to a CBM, and not a technological invention, even if the patent includes additional claims that would not qualify for CBM review. Ex. 1002, p. 48736.

The ‘538 Patent fails prong (1) because the ‘538 patent claims do not recite a technological feature that is novel and unobvious over the prior art. As shown in the recently concluded reexamination of the ‘538 Patent (90/013,050), it was the

data used by the system, and not the *system* itself or anything of a technical nature, that was considered to be the patentable feature.

As set forth in the Office action, the Young reference teaches an inventory control database for a “customer” that includes information such as the item quantity on hand (see, e.g., pages 142-145 and Table 9.1), but does not teach “inventory and cost information for a plurality of manufacturers, suppliers, or distributors.” The El Sawy reference teaches inventory and cost information that includes “pricing and availability” of items and “real-time inventory pricing from over 100 suppliers” (i.e., a plurality of suppliers) (see, e.g., page 16, Box 4), but does not teach the limitation wherein the information includes “a number of items in manufacturer, supplier or distributor inventory.” The “availability” of an item does not denote **the actual “number” or the actual “count” of an item in inventory.**

Moreover, there is no teaching or suggestion that a customer’s inventory control database such as described in Young could or would have been granted access to manufacturer, supplier or distributor information that includes “a number of items in manufacturer, supplier or distributor inventory.” **In other words, none of the references teaches or suggests a database that combines both the claimed “customer inventory information” that includes “a number of items at a customer” and the claimed “inventory and cost information for a plurality of manufacturers, suppliers, or distributors” that includes “a number of items in manufacturer, supplier or distributor inventory.”**

Ex. 1008, pp. 6-7. The Examiner thus believed that the patentable features were not a new computer, a new database or anything technical, but rather issued the Reexamination Certificate based upon the *kind of information* in the system. This is not a technical invention. Even assuming, *arguendo*, that the ‘538 Patent’s method of using certain inventory-related data were novel, such are not

“technological” features. Congress explained that accomplishing a business process or method is not technological, whether or not that process or method is novel. *See, e.g.*, Ex. 1004, p. 634; Ex. 1006, ¶ 36.

The ‘538 Patent also fails prong (2) because the challenged claims do not solve a technical problem using a technical solution. Rather, the patent purports to improve “upon the prior art by shifting the burden of inventory tracking onto a third party” so that users gain “significant buying power” which can be used “to negotiate better deals.” Ex. 1001, 1:45-52. The ‘538 Patent also purports to reduce delivery costs, to reduce labor costs, and to allow users to take advantage of manufacturer specials. Ex. 1001, 1:59-2:6. None of these are technical problems. Ex. 1006, ¶ 36.

Further, the ‘538 Patent does not provide a “technical” solution to the identified problem, even if one were to assume that the problem were a technical problem. The ‘538 Patent does not claim an improvement in any computer-related technology but merely the use of various inventory-related information with already existing computer technology. Ex. 1006, ¶ 36.

While the claims of the ‘538 Patent recite a “computer system,” “client software,” a “database,” or a software “interface,” Congress has explained that simply reciting technology like “software, memory, computer-readable storage

medium, [or] databases” does not make a patent directed to a technological invention. Ex. 1004, p. 635.

Notably, the ‘538 Patent is very similar to other patents that have qualified as Covered Business Method Patents. For example, in CBM2013-00055, the patent generally related to “a system which facilitates sales from an inventory of the selling entity.” CBM2013-00055, paper 16, p. 3. Also, in CBM2012-00001, the patent was directed to “a method and apparatus for pricing products and services.” CBM2012-00001, paper 36, p. 3. For at least the reasons stated above, the ‘538 Patent is a covered business method patent, is not directed to a technological invention, and is subject to review under § 18 of the AIA.

D. Petitioner Has Been Sued for Infringement of This Patent

Unisone sued Life Technologies Corporation, as well as its customers, for infringing the ‘538 Patent on June 3, 2013 in the Southern District of California. See Ex. 1005; 37 C.F.R. § 42.302(a). Petitioner is not estopped from challenging the claims on the grounds identified in the petition. 37 C.F.R. § 42.302(b).

V. Identification of Challenge - 37 C.F.R. § 42.304(b)

A. Claims for Which Review Is Requested - 37 C.F.R. § 42.304(b)(1)

Petitioner respectfully requests review and cancellation of claims 52, 62, 67, 70–76, 81, 83–85, and 96 of the ‘538 Patent.

B. Statutory Grounds of Challenge - 37 C.F.R. § 42.304(b)(2)

Petitioner requests that claims 52, 62, 67, 70–76, 81, 83–85, and 96 be cancelled as reciting patent-ineligible subject matter under 35 U.S.C. § 101.

VI. Factual Background

A. Declaration of Michael Siegel, Ph.D.

This Petition is supported by the declaration of Michael Siegel, Ph.D. Dr. Siegel is a Principal Research Scientist in the Information Technology Group at MIT’s Sloan School of Management. He is currently Co-Director of the Productivity from Information Technology (PROFIT) Project at MIT and has served as a Senior Lecturer at the Sloan School of Management. Dr. Siegel holds a Ph.D. in Computer Science and has over 25 years of experience with finance-related and business-related computer systems. Ex. 1006.

Dr. Siegel provides his testimony on claim construction (Ex. 1006, ¶¶ 33-34), background of the technology (Ex. 1006, ¶¶ 16-28), the level of skill held by one of ordinary skill in the art (Ex. 1006, ¶ 15), and provides a comprehensive analysis of the challenged claims under 35 U.S.C. § 101 (Ex. 1006, ¶¶ 37-93).

B. Background of Inventory Management

In his declaration, Dr. Siegel testifies about the long history of inventory management, much of which Petitioner presents below. Ex. 1006, ¶¶ 16-28.

The patent mentions inventory control. For example, the “Field of the Invention” section of the ‘538 Patent states: “[t]he present invention relates to the

field of electronic inventory control. In particular, the present invention relates to controlling healthcare supply inventories.” Ex. 1001, 1:18–20; Ex. 1006, ¶ 16.

Dr. Siegel notes that the Merriam-Webster online dictionary defines inventory control as follows:

:coordination and supervision of the supply, storage, distribution, and recording of materials to maintain quantities adequate for current needs without excessive oversupply or loss. Ex. 1015; Ex. 1006, ¶ 17.

In general, the ‘538 Patent deals with inventory management, and specifically, the challenged claims are all directed to inventory management. The business dictionary defines inventory management in terms of maintaining an optimum (i.e., desired) number or amount of an item:

Activities employed in maintaining the optimum number or amount of each inventory item. The objective of inventory management is to provide uninterrupted production, sales, and/or customer-service levels at the minimum cost. Since for many companies inventory is the largest item in the current assets category, inventory problems can and do contribute to losses or even business failures. Also called inventory control. Ex. 1009.

Dr. Siegel testifies that one of ordinary skill in the art would understand that the ordinary and customary meaning of “inventory management” is consistent with this definition and that the use of the term “optimum” is being used subjectively

with respect to the inventory manager in that the inventory level maintained is what the inventory owner deems desirable.

He also testifies that inventory management is a very old field and techniques of inventory management date back to as early as 8000 BCE in Mesopotamia where clay tokens were used for some form of record-keeping.

It seems they did it by maintaining stocks of baked-clay tokens—one token for each item, different shapes for different types of items. A marble-sized clay sphere stood for a bushel of grain, a cylinder for an animal, an egg-shaped token for a jar of oil. There were as many tokens, or counters, of a certain shape as there were of that item in the farmer's store. Ex. 1010; Ex. 1006, ¶ 18.

Dr. Gunter Dreyer, a prominent archaeologist, believes that writing developed (as early as 5300 years ago) out of early marks used to tally the types and amounts of goods in stock in ancient warehouses. Recently, Dr. Dreyer discovered bags of oil and linen that had numerous inscribed bone labels attached to them in the tomb of King Scorpion I at Abydos, Egypt. Ex 1011; *see also* Ex. 1012; Ex. 1006, ¶ 19.

Early inventory management practices were also seen in parts of the world other than Egypt. Early writing systems, such as Mycenaean and Knossian Linear-B, Babylonian cuneiforms, and Chinese pictographs, are represented in the archaeological world by long lists of common goods used by these first

civilizations, such as bins of grain, jars of oil, and weapons and armor. Ex. 1013; Ex. 1006, ¶ 20.

As Dr. Siegel testifies, based on the above definition (Ex. 1009), one of ordinary skill in the art would recognize the term “inventory management” to mean “activities employed in maintaining the optimum number or amount of each inventory item,” where the term “optimum” refers to the inventory level desired by the business whose inventory is being managed. Ex. 1009. The activities used to ensure the optimum number or amount of each inventory item include forecasting needs, identifying restocking levels, and placing orders to maintain inventory. Ex. 1006, ¶ 21.

These activities were well known in the early times as many Greek, Roman, and French writings include information regarding early military requirements for inventory control. For example, in ancient times, armies had to keep on the move and requisition supplies from the lands they passed through, or stay close to a shore or river so that ships could resupply them. Ex. 1014; Ex. 1006, ¶ 22.

In ancient societies inventories were recorded and controlled by quantities. In 1494, Luca Pacioli, a professor of mathematics in Italy, wrote a treatise on accounting that included:

quantities, descriptions, and monetary valuations for each type of inventory on hand at the beginning of business. An inventory account was kept for each item. When inventory items were transferred to a

ship, for instance, for transfer to a foreign port, each item was transferred to that particular venture account. When inventory items were sold, the inventory accounts were credited for the proceeds. Ex. 1016 at p. 346; Ex. 1006, ¶ 23.

By the 16th century, inventory management had improved, as evidenced by the Arsenal, which at the time was the most powerful and efficient ships and munitions manufacturer in the world. The Arsenal employed 16,000 people who directly engaged in building the ships. Additionally, the Arsenal efficiently managed the inventory of other goods required for the production of a ship, such as rope, oars, cloth, storage containers, and weapons, which were stored close by the production area in the buildings around the shipyard. This allowed the Arsenal to produce one fully equipped merchant or military vessel each day, as opposed to other shipbuilding locations in Europe where it could take months to produce a fully equipped ship. Ex. 1017; Ex. 1006, ¶ 24.

As time went on and technology progressed, attempts were made to automate inventory management. For example, in 1932, Wallace Flint led a Harvard University Business Administration team in designing an automatic checkout system. The system was designed so that customers picked out punch-hole cards that corresponded to catalog items. The idea was that a machine would read the cards and then pass the information to the storeroom, where the selected items would be mechanically removed and placed on conveyor belts for delivery to

the customer. Machines could then create a customer bill and update the inventory records to reflect the purchase. Ex. 1018. This system, however, was too expensive to go into use and never made it past Flint’s Master’s thesis. Ex. 1006, ¶ 25.

From Dr. Siegel’s history of inventory management, he concludes that it readily can be seen that each step of the challenged claims is subsumed within the idea of inventory management, and each step is well known, including only routine and conventional activity. Ex. 1006, ¶ 28.

VII. Claim Construction - 37 C.F.R. § 42.304(b)(3)

A. Broadest Reasonable Interpretation

In the instant proceeding, a claim in an unexpired patent is to be given its broadest reasonable construction in light of the specification in which it appears. 37 C.F.R. § 42.300(b); *see also In re Yamamoto*, 740 F.2d 1569, 1571 (Fed. Cir. 1984). Pursuant to the USPTO’s final Office Patent Trial Practice Guide, each claim term, except for those listed below, is to be given its plain and ordinary meaning due to the simplistic concepts and terminology of the ‘538 Patent claims. *See* Ex. 1007.

The claim constructions shown below and the rationale urging their adoption are supported by the declaration of Dr. Siegel. *See* Ex. 1006, ¶ 33-34.

Claim Term	Broadest Reasonable Interpretation
Customer (claims 52, 62, 67, 70-76,	A buyer (person or organization) of

and 81)	products that uses the claimed inventory management
Inventory management (claim 67)	Activities employed in maintaining the optimum number or amount of each inventory item
Inventory management system (claims 52 and 62)	Any system or methodology for performing activities employed in maintaining the optimum number or amount of each inventory item
Managing customer inventory (claim 81)	Activities employed in maintaining the optimum number or amount of each inventory item for a customer

1. Specification Support for Constructions

Customer: One of ordinary skill in the art would understand the term “customer” to mean “a buyer (person or organization) that uses the claimed inventory management.” One of ordinary skill in the art would understand that this is the broadest reasonable interpretation and the ‘538 Patent supports this construction:

The present invention also provides a forum through which resellers and customers may directly interact to resell surplus and used equipment. Ex. 1001, abstract.

A VMI system allows a customer to reduce costs by pushing inventory management responsibilities onto a third party, or manager. Managers may service multiple companies, thus allowing them to negotiate better deals, improve supplier responsiveness, and serve as an effective customer advocate. Ex. 1001, 2:38-44.

As illustrated in FIG. 1, the present invention utilizes a client/server architecture to facilitate communication between customer inventory systems and managers. A client running on a Customer Inventory

System 130 may be used to track inventory, place special orders, and interact with other customers. Ex. 1001, 2:55-60; see also Ex. 1001, 4:37-51.

Customer--Refers to a buyer of products via the present invention. Customers can have "open account" relationships to avoid credit card and COD shipment problems. Ex. 1001, 5:54-56.

Customer Inventory--A list of products to be maintained at a given customer site. Ex. 1001, 6:8-9.

A client displaying such information may allow a customer to indicate an interest in a product by typing a command, clicking a button or other graphical interface element, or otherwise interacting with said client. If a customer expresses an interest in a featured product, a client may allow a customer to create a one-time order, or to configure recurring orders. Ex. 1001, 7:66-8:5; see also Ex. 1001, 8:6-12.

Customers can initiate such an order by clicking a button or otherwise interacting with a graphical or physical interface. In a preferred embodiment, a customer may select from products or groups of products already included in an inventory or stocking plan, or a customer may search for products through an interface similar to that described earlier. As previously described, customers can designate standard restocking quantities, and client software may use such quantities as defaults when clients are requesting additional inventory. Client software may also present quantities on hand to help customers make smarter purchasing decisions. Based on such information,

customers can modify order quantities before submitting an order.

Ex. 1001, 11:13-25.

Furthermore, the only challenged claim that requires more than one customer is claim 74. All other claims cover the situation where there is only a single customer. Ex. 1006, ¶ 34.

Inventory Management, Inventory Management System, and Managing

Customer Inventory: Petitioner discusses all three terms together because they are all derivatives of inventory management. At § VI(B) *supra*, Petitioner presented inventory management in detail, providing its history and the meaning as one of ordinary skill in the art would understand it. Dr. Siegel testifies that one of ordinary skill in the art would understand the term “inventory management” to mean “activities employed in maintaining the optimum number or amount of each inventory item,” where the term “optimum” refers to the inventory level desired by the business whose inventory is being managed. The specification uses the term sparsely and does not contradict this ordinary and customary meaning:

As an office increases in size, inventory management becomes more of a challenge, and monitoring of frequently used or crucial items becomes very important. Typically a person is given the responsibility of monitoring inventory and ordering replacements as supply diminishes. As a company further increases in size, more advanced inventory management techniques may be used. For example, supply and usage trends may be analyzed to determine minimum quantities

on hand, and seasonal or other peak usage may be determined. Ex. 1001, 1:28-37.

The present invention utilizes web-enabled technologies to revolutionize inventory management by tracking inventory and automatically contacting suppliers, manufacturers, or distributors when additional supplies are needed. Ex. 1001, 1:59-65.

The present invention implements an Internet-based, vendor managed inventory ("VMI") system. A VMI system allows a customer to reduce costs by pushing inventory management responsibilities onto a third party, or manager. Ex. 1001, 2:38-41.

The present invention utilizes web-enabled technologies to revolutionize inventory management by tracking inventory and automatically contacting suppliers, manufacturers, or distributors when products are needed. Ex. 1001, 2:47-50.

Such a handheld device can connect to a local inventory management system through a wireless or wired means, and, when appropriate, a prescribed item sample may be automatically dispensed by a vending machine. Ex. 1001, 3:64-67.

Moreover, based on Dr. Siegel's analysis and view of the specification, one of ordinary skill in the art would understand "inventory management system" to merely mean "any system or methodology for performing activities employed in maintaining the optimum number or amount of each inventory item," and one of ordinary skill in the art would understand "managing customer inventory" to mean

“activities employed in maintaining the optimum number or amount of each inventory item for a customer.” Dr. Siegel also notes that one of ordinary skill in the art would understand that the term “optimum” is being used in these definitions in the same way as the definition for “inventory management.” Ex. 1006, ¶ 34.

VIII. The ‘538 Patent

The ‘538 Patent purports to improve over the prior art by shifting inventory management to a third party, rather than being performed by the company using the products. Ex. 1001, 1:23-52. This concept is known as vendor managed inventory (“VMI”). By managing inventory for multiple companies, the goal is to increase buying power to negotiate better deals, reduce labor costs, and allow users to be able to take advantage of manufacturer specials. Ex. 1001, 1:45-2:6.

Although the ‘538 Patent purports to take advantage of various technologies, like web technology, the challenged claims require only generic implementation of the abstract idea of inventory management. See *infra* at § IX(B)(1)(a).

IX. Claims 52, 62, 67, 70–76, 81, 83–85, and 96 of The ‘538 Patent Recite Patent-Ineligible Subject Matter Under 35 U.S.C. § 101

The Supreme Court recently clarified the § 101 analysis for computer-related inventions as a two-part analysis:

- First, it must be determined whether the claims are directed to a law of nature, natural phenomena, or abstract idea.
- If so, then the next part of the analysis is to ask, “[w]hat else is there in the claims before us?” To answer that question, the elements of each claim are

considered both individually and as an ordered combination to determine whether the additional elements “transform the nature of the claim” into a patent-eligible application.

Alice Corporation v. CLS Bank, 573 U.S. ___, slip op., at 7 (2014) (citing *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 132 S. Ct. 1289, 1297 (2012)). The Supreme Court has described step two 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.’” *Id.*

The ‘538 Patent fits squarely within the holding of *Alice* because the challenged claims recite the abstract idea of inventory management with little, if anything, else. Nevertheless, the Petitioner below applies all the prevailing § 101 tests to demonstrate that the challenged claims are unpatentable.

A. *Alice’s* Step One: Claims 52, 62, 67, 70–76, 81, 83–85, and 96 Recite an Abstract Idea

The Supreme Court has found that subject matter very similar to inventory management constitutes an abstract idea. For example, in *Bilski*, the Supreme Court held that “the basic concept of hedging, or protecting against risk” was a “fundamental economic practice long prevalent in our system of commerce and taught in any introductory finance class” and therefore was an abstract idea. *Alice*, slip op., at 8-9 (citing *Bilski v. Kappos*, 561 U.S. 593, 611 (2010)). Also, in *Alice*,

the Supreme Court held that a method of exchanging financial obligations between two parties using a third-party intermediary was an abstract idea because it was a fundamental economic practice long prevalent in our system of commerce and a building block of our modern economy. *Alice*, slip op., at 9.

The challenged claims of the ‘538 Patent recite an abstract idea because they are directed to the fundamental business and economic practice of inventory management, a “fundamental economic practice long prevalent in our system of commerce.” *Alice*, slip op., at 8-9 (citing *Bilski v. Kappos*, 561 U.S. 593, 611 (2010)); see § VI(B). For example, claim 67 recites a “method for inventory management” including “collecting and storing . . . customer inventory information . . . inventory and cost information for a plurality of manufacturers,” “evaluating . . . inventory information,” “ordering . . . inventory,” and “tracking inventory.” Ex. 1008, p. 33. The other independent claims that are challenged, claims 52 and 81, contain similar recitations. Ex. 1006, ¶¶39-40, 42, 77, and 88.

This Board need look no further than *Bilski* and *Alice* to hold that the challenged claims recite an abstract idea: inventory management.

B. *Alice’s* Step Two: Claims 52, 62, 67, 70–76, 81, 83–85, And 96 Do Not Contain an Inventive Concept To Transform The Abstract Idea Into a Patent-Eligible Application

The abstract idea of inventory management subsumes each element of the challenged claims. Once the abstract idea is ignored, there is little, if anything, left

to the claims. In *Alice*, the Supreme Court described the second step as a search for additional features to ensure that the claim “is more than a drafting effort designed to monopolize” the abstract idea. *Alice*, slip op., at 11. In *Mayo*, the Supreme Court made it clear that transformation into a patent-eligible application required more than simply stating the abstract idea while “adding the words ‘apply it.’” *Mayo*, slip op., at 3; *Alice*, slip op., at 11.

In *Alice*, the Supreme Court held that the mere recitation of a generic computer cannot “transform a patent-ineligible abstract idea into a patent-eligible invention.” *Alice*, slip op., at 13. The question in *Alice*, as well as in this proceeding, is “whether the claims here do more than simply instruct the practitioner to implement the abstract idea . . . on a generic computer.” *Id.*, at 14. In *Alice*, the Supreme Court concluded that they do not, and the Board here should conclude the same.

Below, the Petitioner analyzes the challenged claims in three groups: (a) method claims 67 and 70-76; (b) system claims 52 and 62; and (c) computer-readable medium claims 81, 83-85, and 96. For each claim set, the Petitioner performs *Alice*'s generic-computer test and performs all other prevailing § 101 tests: the mental steps test, the machine-or-transformation test, the point-of-novelty test, and the abstract idea test. Each claim fails all of these tests, and as

such, the challenged claims are directed to patent-ineligible subject matter pursuant to 35 U.S.C. § 101.

1. Claims 67 and 70-76

Claims 67 and 70-76 are reproduced below in their post-reexamination form (see Ex. 1008):

67. A method for inventory management, comprising:

(a) collecting and storing, on one or more databases having client software, at least the following data:

(1) customer inventory information, the customer inventory information including a number of items at a customer,

(2) inventory and cost information for a plurality of manufacturers, suppliers, or distributors, the inventory information for the plurality of manufacturers, suppliers, or distributors including: a product identifier and a number of items in manufacturer, supplier or distributor inventory, and

(3) inventory restocking parameters provided by said customer;

(b) evaluating via at least one computer said customer inventory information and inventory or cost information for a plurality of manufacturers, suppliers, or distributors in light of said restocking parameters provided by said customer;

(c) ordering manufacturer, supplier, or distributor inventory which best fulfills said inventory restocking parameters provided by said customer;

(d) tracking inventory items in said databases for (1) the number of items at said customer and (2) the number of items at said

manufacturer, supplier, or distributor, as inventory items are added to, restocked to, or removed from said inventories;

(e) updating said data on said one or more databases, using information obtained in said inventory tracking, through at least one software interface to said databases; and

(f) providing access via client software to information in said one or more databases to each said customer, manufacturer, supplier, or distributor,

wherein said client software allows one or more customers, manufacturers, suppliers, or distributors to be classified into groups, and where permissions or roles are assigned to such groups.

70. The method of claim 67, wherein said method comprises the additional step of forecasting inventory usage or inventory availability for each said customer, manufacturer, supplier, and distributor, based upon said customer, manufacturer, supplier, or distributor information.

71. The method of claim 67, wherein said client software monitors inventory levels and reports anticipated shortages.

72. The method of claim 67, wherein said client software monitors inventory levels and generates orders to cover anticipated shortages.

73. The method of claim 67, wherein said client software allows users to order new inventory items or to supplement inventory when desired.

74. The method of claim 67, wherein said customer inventory information is collected and stored for multiple customer business sites or for multiple customers, and wherein inventory restocking parameters provided by said customer are collected and stored for each said customer.

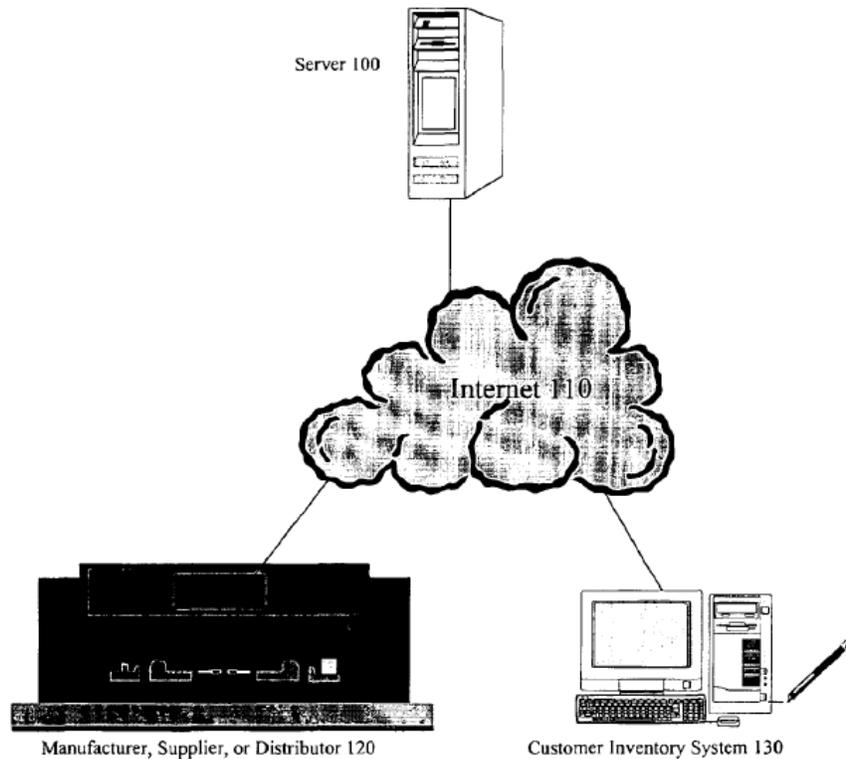
75. The method of claim 67, wherein said inventory and cost information is collected and stored for multiple manufacturers, suppliers, or distributors.

76. The method of claim 67, wherein said step updating takes place in real time.

a) Claims 67 and 70-76 Fail the Generic Computer Test

Dr. Siegel testifies that claim 67 merely requires generic computer implementation of the abstract idea of inventory management. He reaches this conclusion because the ‘538 Patent’s hardware and software descriptions require only generic computer implementation (not specialize hardware or specialized software) and the claim is abstract, with no implementation details. Ex. 1006, ¶ 43.

Dr. Siegel first analyzes Fig. 1, which illustrates “the major hardware components of the present invention.” Ex. 1006, ¶ 44; Ex. 1001, at 2:54-55.



Dr. Siegel notes that the '538 Patent describes that a client running on Customer Inventory System 130 may be used to track inventory and may include “custom software, such as an application, written in Visual Basic, JAVA, or C; commercial software, such as a web page accessible through a web browser; or a combination of custom and commercial software. . . .” Ex. 1001, 2:61-65. Dr. Siegel testifies that one of ordinary skill would interpret this statement to mean that the client may utilize customized or standard off-the-shelf software or a combination of the two, and thus, the client implementation does not need to be anything other than generic software, using conventional tools. The customer inventory system 130 is described functionally, and then an example is given of a

handheld device, such as a Palm VII, but the patent drafter made it clear that this was merely an example and not intended to limit the invention in any way. Ex. 1006, ¶ 45; See Ex. 1001, 3:3-10:

Customer Inventory Systems **130** may allow manual inventory tracking, semi-automated inventory tracking, or inventory may be dispensed using automated systems. **By way of example, without intending to limit the present invention, a preferred embodiment of the present invention includes a handheld device,** such as a Palm VII device by Palm Computing, Inc., to be outfitted with a barcode scanner. Such a device can allow barcodes or other identifiers

Dr. Siegel testifies that the client is further described functionally and alternatively at 3:45-4:18. The language used in this description is functional, alternative, and generic. For example, the '538 Patent consistently uses the phrase “by way of example, without intending the limit the present invention” (Ex. 1001, 3:47-49) and is replete with terminology such as “may” which does not limit the implementation to any particular hardware, software or algorithm. Ex. 1006, ¶ 46; See Ex.1001, 4:6-19:

As inventory is distributed, Customer Inventory System **130** **may** track supply usage habits to determine minimum acceptable quantities on-hand. Usage information **may** be studied for various periods of time, and the present invention **may** create an inventory usage model based on collected data. As models are created and refined, the present invention **may** modify minimum in-stock thresholds to reflect anticipated usage. As quantity in-stock approaches a calculated or specified threshold, Customer Inventory System **130** **may** automatically request new supplies from Server **100**. Supply requests **may** include various information, including, but not limited to, urgency of request, customer willingness to accept alternative brands or sizes, billing information, and shipping information.

Dr. Siegel also notes that the server as discussed in the '538 Patent is described functionally and generically without reference to any particular hardware device, specialized software or algorithm. Ex. 1006, ¶ 47; See Ex. 1001, 4:19-30:

As Server 100 receives supply requests, Server 100 may request price quotes from several Manufacturer, Supplier, or Distributor 120's ("Distributor 120"). Distributor 120 may respond with quantity available, price, estimated delivery time, and other such information. Server 100 may then automatically evaluate each Distributor 120 response to find the best value given various factors associated with each customer request. When an appropriate Distributor 120 response is chosen, Server 100 may automatically arrange payment and shipping of requested supplies for Customer Inventory System 130.

Dr. Siegel further testifies that even the communication method between the customer inventory system and the server is generically described because such communication can be achieved via various methods. Ex. 1006, ¶ 48; See Ex. 1001, 4:31-36:

Communication between Customer Inventory System 130, Server 100, and Distributor 120 may be achieved through various methods, including, but not limited to, hypertext transfer protocol ("HTTP"), file transfer protocol ("FTP"), simple mail transfer protocol ("SMTP"), or other such related methods.

Fig. 2 of the '538 Patent also purports to describe the server, but Dr. Siegel testifies that it does so generically:

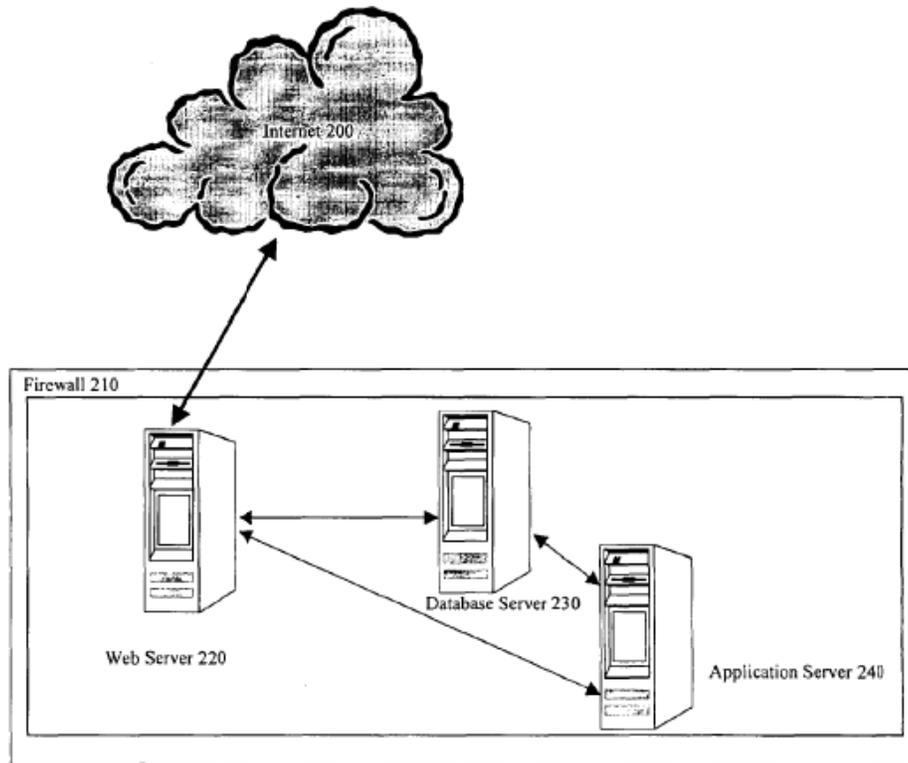


Figure 2

Dr. Siegel concludes that the ‘538 Patent describes these components generically because no specialized hardware is described, not even suitable examples, and the only examples of suitable software are conventional, off-the-shelf programs. First, no hardware examples are provided. Ex. 1006, ¶ 49; See Ex. 1001, 4:58-65:

FIG. 2 illustrates a preferred embodiment of Server **100**, in which relationships between data storage, web server, and application services provided by Server **100** are illustrated. All client communications may first pass through Firewall **210**. Firewall **210** represents a combination of software and hardware which is used to protect the data stored in Web Server **220**, Database Server **230**, and Application Server **240** from unauthorized access.

Second, the exemplary software consists of conventional off-the-shelf programs. Ex. 1006, ¶ 50; See Ex. 1001, 5:3-8; 15-19:

protocols. Examples of such software include Internet Information Server, developed by Microsoft Corporation of Redmond, Wash.; Enterprise Server, developed by Netscape Corporation of Mountain View, Calif.; and Apache Server, developed by the Apache Software Foundation of Forest Hill, Md.

Database Server 230 represents commercially available database software, such as Microsoft SQL Server, developed by Microsoft Corporation of Redmond, Wash., Oracle 8i, developed by Oracle Corporation, of Redwood Shores, Calif., or other, similar software. Database Server 230 may

And no particular hardware configuration is required. In fact, Dr. Siegel testifies that any hardware configuration will suffice for implementation. Ex. 1006, ¶ 51; See Ex. 1001, 5:38-42:

Web Server 220, Database Server 230, and Application Server 240 each represent software which may run on the same computer, or on multiple computers. In addition, Application Server 240 may be implemented within Database Server 230 as a set of business rules.

Dr. Siegel notes that after this brief description of the generic and conventional hardware/software environment, the '538 Patent provides a "functional specification" which "should not be construed as limiting the present invention." Ex. 1001, 5:47-51. The description found in that portion of the '538 Patent consists of virtually all data that the system might use and therefore is accurately viewed as a functional specification. Ex. 1006, ¶ 52.

Dr. Siegel testifies that one of ordinary skill in the art would understand that engineering projects typically start with a functional specification that describes

the functionality that the system will perform. In such documents, little design related information is disclosed, just like the '538 Patent. After the functionality of the system has been decided, then various levels of design documentation are typically generated, including a high-level design document that discloses the major subsystems of the overall system and each's high level functionality as well as a low-level design document that would describe in great detail the design of each subsystem, including interfaces, processing, components, etc. The '538 Patent's self-description as a functional specification is appropriate, because it lacks many of the design details that Dr. Siegel, and those skilled in the art, would expect to see in a design document. Such a functional description leads Dr. Siegel to conclude that the '538 Patent discloses merely an inventory management system that is generically implemented on a general purpose computer system and uses only routine, conventional components, including hardware and software. Ex. 1006, ¶ 52.

Dr. Siegel notes that Fig. 5 of the '538 Patent describes more hardware, but this is directed to an RFID portal, which is not relevant to the challenged claims. Ex. 1001, 3:34-44. He also notes that Fig. 3 and Fig. 4 disclose flowcharts which do not change the generic nature of the '538 Patent. Fig. 3 and the accompanying text provide a generic description of updating data on a server. See Ex. 1001, Fig 3; 6:59-7:15. This process, the updating of data on a server, is generically and

functionally described and is conventional in nature. The steps described would have to almost always be performed when updating data on a server, and are not unique in any respect. Additionally, Fig. 4 and the accompanying text describe a method for monitoring that a data connection still exists between the client and server. See Ex. 1001, Fig. 4; 7:16-51. Maintaining a data connection is not relevant to the challenged claims, but Dr. Siegel nevertheless notes that again, the description in the '538 Patent is generic and describes the functional aspect in routine, conventional methods. Ex. 1006, ¶ 53.

For these reasons, Dr. Siegel concludes that the '538 Patent describes the various hardware and software components functionally and generically. The '538 Patent does not require any specialized hardware or software, nor does it contain any specific implementation details.

Claim 67 requires even less, amounting to little more than taking the abstract idea of inventory management and applying it to a generic computer environment. Ex. 1006, ¶ 54. Claim 67 requires only (a) collecting and storing various inventory –related information in a database, including number of items at a customer, inventory and cost information that includes a product identifier and number of items, inventory restocking parameters, (b) evaluating the customer inventory information and inventory or cost information in light of the restocking parameters, (c) ordering inventory, (d) tracking inventory, (e) updating the data, and (f)

providing access via client software to information in one or more databases. Such functionality constitutes a generic computer implementation because virtually any inventory management system would perform such steps. Dr. Siegel testifies that this claim is not tied to any particular hardware, software or algorithm, and one of ordinary skill in the art would recognize that it cannot be because the '538 Patent itself is devoid of such details. Ex. 1006, ¶ 55.

In summary, Dr. Siegel concludes that all claim 67 requires is conventional and generic computer components and operations for performing inventory management. Also, nothing in claim 67 requires that the operations be performed by more than a single person. All of the steps of claim 67 are simply part of the abstract idea of inventory management. Even step (f), which provides for the grouping of the customers, suppliers, distributors, and manufacturers, and allocating different privileges to them, is as old as trade itself. Ex. 1006, ¶ 56.

Dr. Siegel further concludes that dependent claims 70-76 of the '538 Patent add nothing of significance to the method recited in independent claim 67. Claim 70 adds forecasting. Claim 71 adds monitoring. Claim 72 adds monitoring and generating orders. Claim 73 allows users to order new inventory items or supplement inventory. Claim 74 stores customer inventory information for multiple customer business sites or customers and the restocking parameters are stored for each customer. Claim 75 collects and stores inventory and cost

information for multiple manufacturers, suppliers or distributors, and claim 76 adds updating in real time. Dr. Siegel testifies that none of the additional limitations found in these claims add anything significant to the method set forth in claim 67 that would require more than generic computer implementation of the abstract idea, particularly since the ‘538 Patent’s disclosure only provides such a generic disclosure. In fact, Dr. Siegel testifies that the additional features of claims 70-76 are all subsumed within the abstract idea of inventory management. Ex. 1006, ¶ 57. As such, these claims are directed to patent-ineligible subject matter under 35 U.S.C. § 101.

b) Claims 67 and 70-76 Fail the Mental Steps Test

The Supreme Court has held that processes that can be performed manually (“mental processes”) are not patent eligible. *Gottschalk v. Benson*, 409 U.S. 63, 66-67 (1972). In *Benson*, the claims required a general purpose computer to perform a BCD to binary conversion; however, the underlying process could be performed “without a computer” by performing calculations using a conversion table. *Id.* This Board has also recognized that claims whose underlying process could be performed using pen and paper recite patent-ineligible subject matter. *SAP Am., Inc. v. Versata Dev. Grp, Inc.*, CBM2012-00001, Final Written Decision, paper 70, at 29-30.

Dr. Siegel testifies that the underlying process of claim 67 can be performed using pen and paper, and he thus concludes that claim 67 fails the mental steps test. Step (a) consists of collecting and storing various inventory-related information, all of which can be written down on a pad of paper or a ledger of some sort by people managing inventory. Such steps have been undoubtedly performed for decades before the year 2000, if not a hundred or more years.

Step (b) consists of evaluating customer inventory information and inventory and cost information for a plurality of manufacturers, suppliers or distributors in light of restocking parameters. This evaluation can be done mentally as well as via pen and paper, and this step has also undoubtedly been performed for decades before the year 2000, if not for a hundred or more years.

The ordering inventory of step (c) can be achieved manually by making a phone call, sending a letter, or visiting a manufacturer, and has been done for decades, if not hundreds of years.

The tracking of inventory items of step (d), the updating data of step (e), and providing access to information of step (f) can all be done mentally as well as using pen and paper. For example, a ledger can be used to track inventory items, and this ledger can be updated and shown to virtually anyone who is interested as well as shown selectively based on that person's or organization's role. The steps of claim 67 can all be performed using pen and paper and have undoubtedly been

performed for decades before the year 2000 at least and perhaps for hundreds of years. There is nothing unique to the steps in Claim 67 of the '538 Patent to require that a computer be used to perform those steps. Ex. 1006, ¶ 58.

Dr. Siegel further concludes that claims 70-76 (which depend from claim 70) can also be performed using pen and paper, and that the limitations added in those claims do not add any items that require a computer be used. Claim 70's forecasting can be performed mentally by a person simply looking over their ledger and considering their needs based on customer, manufacturer, supplier or distributor information. Dr. Siegel notes that this step has been performed for decades before the year 2000, if not for hundreds of years. Ex. 1006, ¶ 59.

Dr. Siegel testifies that claim 71 can be performed using pen and paper by manually monitoring inventory levels and anticipating shortages. This step has also been done for many, many years. Ex. 1006, ¶ 60.

He also testifies that claim 72 can be performed using pen and paper by a person monitoring their inventory levels by looking at their inventory or their ledger and generating orders to cover anticipated shortages. This step has been done for many years by many businesses. Ex. 1006, ¶ 61.

Dr. Siegel concludes that claim 73 can be performed by a person manually ordering inventory using a telephone, mail or by visiting a manufacturer. This step

has been performed for many decades, if not a hundred or more years. Ex. 1006, ¶ 62.

Dr. Siegel testifies that claim 74 can be performed using pen and paper by writing inventory information associated with multiple business sites or customers and by associating restocking parameters for each customer. This step has been performed for decades at least and perhaps a century or more. Ex. 1006, ¶ 63.

Dr. Siegel testifies that claim 75 can be performed using pen and paper by writing down inventory and cost information associated for multiple manufacturers, suppliers or distributors. This step has been performed for decades or centuries. Ex. 1006, ¶ 64.

Lastly, claim 76 can be performed using pen and paper by updating the inventory information as it changes. This step has been performed for many decades. Ex. 1006, ¶ 65.

As can be seen from Dr. Siegel's analysis, not only can the steps of claims 67 and 70-76 be performed mentally or manually and do not require the use of a computer, but each step is also insignificant, routine, and conventional, which is part of the point-of-novelty test that Petitioner presents below. Ex. 1006, ¶ 66.

c) Claims 67 and 70-76 Fail the Machine-or-Transformation Test

Although not the only § 101 test, the Supreme Court has held that the machine-or-transformation test is a “useful and important clue” to patent

eligibility. *Bilski*, 561 U.S., at 604. The machine-or-transformation test finds patent-eligibility if the claim (1) is tied to a particular machine or apparatus or (2) transforms a particular article into a different state or thing. *Id.*, at 602. For the machine prong, the “machine” must be central to the claim. *Prometheus Labs., Inc. v. Mayo Collaborative Servs.*, 628 F.3d 1347, 1357-58 (Fed. Cir. 2010), *rev’d on other grounds*, 132 S. Ct. 1289 (2012); *see also Ultramercial, Inc. v. Hulu, LLC*, ___ F.3d. ___, slip op., at 12 (Fed. Cir. Nov. 14, 2014) (“The claims of the ‘545 patent, however, are not tied to any particular novel machine or apparatus, only a general purpose computer.”).

Dr. Siegel testifies that claim 67 includes only brief technical recitations of one or more databases having client software, at least one or more computers, and a software interface. One of ordinary skill would recognize that these limitations are not integrated with the claim, are not central to the claim, and do not meaningfully limit the claim. Dr. Siegel considers these limitations be a mere afterthought. Additionally, Dr. Siegel has testified that, and as discussed above, the underlying process of this claim can be done mentally and using a pen and paper. Ex. 1006, ¶ 67.

Dr. Siegel also concludes that claim 67 does not involve transformation of an article into a different state or thing. Thus, claim 67 fails the machine-or-transformation test. Ex. 1006, ¶ 68.

As to claims 70-76, Dr. Siegel testifies that these claims add nothing more significant to make the machine limitations central to the claim. Claim 70 merely adds forecasting without any technical limitations. Claims 71-73 add additional, well-known, routine, and insignificant functionality to the client software, and claims 74-76 relate to how data is stored and updated without any additional technical limitations. Therefore, none of claims 70-76 add any significant technical or hardware limitations that would render the machine limitations central to the claim. Moreover, none of these claims add any transformation of an article to a different state or thing. Claims 70-76 of the '538 Patent thus fail the machine-or-transformation test. Ex. 1006, ¶ 69. The challenged claims are directed to patent-ineligible subject matter as set forth in *Bilski*, and therefore should be cancelled.

d) Claims 67 and 70-76 Fail the Point-of-Novelty Test

The Supreme Court has found that when a law of nature, natural phenomena or abstract idea is recited in a claim, it is not enough that the rest of the claim include only well-understood, routine, and conventional activity. *Mayo Collaborative Services v. Prometheus Labs., Inc.*, 132 S. Ct. at 1298:

To put the matter more succinctly, the claims inform a relevant audience about certain laws of nature; any additional steps consist of well understood, routine, conventional activity already engaged in by the scientific community; and those steps, when viewed as a whole,

add nothing significant beyond the sum of their parts taken separately. For these reasons we believe that the steps are not sufficient to transform unpatentable natural correlations into patentable applications of those regularities.

See also Parker v. Flook, 437 U.S. 584, 594 (1978) (“Respondent’s process is unpatentable under § 101, not because it contains a mathematical algorithm as one component, but because once that algorithm is assumed to be within the prior art, the application, considered as a whole, contains no patentable invention.”)

This analysis has already been addressed as part of the generic computer test and mental steps test above. See §§ IX(B)(1)(a) and (b) *supra*. Dr. Siegel testifies that the abstract idea of inventory management involves (a) collecting and storing inventory-related information, (b) evaluating various inventory-related information and restocking parameters, (c) ordering inventory, (d) tracking inventory, (e) updating various data, and (f) providing access to various information. In other words, the abstract idea itself virtually swallows up the entirety of claim 67. The only remaining features are perhaps the type of information used by the claim as well as the use of a computer, client software, interface, and databases. The information that is recited in claim 67 is not new, but rather has been used in inventory management methods for hundreds of years. Furthermore, the computer, client software, interface and databases in claim 67 are being used in their routine and conventional manner and amount to insignificant and routine uses. Moreover,

in Dr. Siegel's analysis of the '538 Patent at ¶¶ 42-56, he concludes that one of ordinary skill would understand that the '538 Patent's description requires only routine, conventional implementation. Ex. 1006, ¶ 70. Claim 67 therefore fails the point-of-novelty test, and is directed to patent-ineligible subject-matter.

Claims 70-76 of the '538 Patent do not change Dr. Siegel's analysis. Each claim adds additional, well known, insignificant, routine and conventional steps. For example, forecasting (claim 70) was well known, insignificant, conventional and routine. Monitoring, reporting, and ordering per claims 71-73 are well known, insignificant, conventional and routine steps. And claims 74-76's collecting and storing information and updating are also well known, insignificant, conventional and routine steps. All the steps of claims 70-76 have been performed for many decades, if not hundreds of years. Ex. 1006, ¶ 71.

e) Claims 67 and 70-76 Fail the Abstract Idea Test

The Supreme Court has held that, although an abstract idea is not patent eligible, an application of that idea is. *Bilski*, 561 U.S., at 610 (citing *Diamond v. Diehr*, 450 U.S. 175, 187, 192-193 (1981)).

As mentioned above, the abstract idea of inventory management subsumes virtually the entirety of claim 67 of the '538 Patent. Claim 67 is tied only to the abstract idea of inventory management utilizing well known conventional, routine and insignificant technology limitations, such as computer, databases, interface and

client software. Claim 67 is therefore not tied to a particular application of inventory management, but rather toward the entire abstract idea of inventory management. In other words, the steps performed by claim 67 of the ‘538 Patent are those steps that would normally be understood to be performed by many conventional inventory management systems because, as construed above, “inventory management” means “activities employed in maintaining the optimum number or amount of each inventory item.” The steps of claim 67 are such anticipated activities. The type of data that it uses does not change Dr. Siegel’s analysis, as this data has been used undoubtedly in inventory management for decades if not centuries. Ex. 1006, ¶ 72.

Dr. Siegel also testifies that claims 70-76 add only routine, well known, insignificant, and conventional steps to the claims and such functionality has been known for many decades, if not for more than a hundred years. Such trivial limitations do not convert the claims to reciting a practical application, but still preempt virtually all uses of the abstract idea of inventory management. Ex. 1006, ¶ 73.

2. Claims 52 and 62

In *Alice*, after finding the method claims invalid, the Supreme Court found the machine claims and computer-readable medium claims invalid because they were not substantively different. *Alice*, slip op., at 17 (“Because petitioner’s

system and media claims add nothing of substance to the underlying abstract idea, we hold that they too are patent ineligible under §101.”). As discussed below, the machine claims and computer-readable medium claims do not differ from the method claims in substance.

Claim 52 is reproduced below with the variations over claim 67 underlined and claim 62 is also reproduced. These claims are reproduced in their post-reexamination form (see Ex. 1008):

52. An inventory management system, comprising the following elements, operably connected:

(a) at least one computer having at least one storage medium;

(b) one or more databases residing on said at least one storage medium, in which at least the following data is stored:

(1) customer inventory information, the customer inventory information including a number of items at a customer,

(2) inventory and cost information for a plurality of manufacturers, suppliers, or distributors, the inventory information for the plurality of manufacturers, suppliers, or distributors including: a product identifier and a number of items in manufacturer, supplier, or distributor inventory, and

(3) inventory restocking parameters provided by said customer;
and

(c) client software residing on said at least one storage medium providing an interface to said one or more database(s), wherein the

client software identifies users and allows users to be classified into groups, and wherein permissions or roles are assigned to such groups, and wherein:

(i) said software evaluates said customer inventory information and inventory or cost information for a plurality of manufacturers, suppliers, or distributors in light of said restocking parameters provided by said customer,

(ii) said software automatically orders manufacturer, supplier, or distributor inventory which best fulfills said inventory restocking parameters provided by said customer in light of said evaluation,

(iii) said software tracks inventory items in said databases for (1) the number of items at said customer and (2) the number of items at said manufacturer, supplier, or distributor, as inventory items are added to, restocked to, or removed from said inventories,

(iv) said software updates said data on said one or more databases through at least one software interface to said databases; and

(v) said software provides an interface through which said customer, manufacturer, supplier, or distributor can access the information in said one or more databases according to said assigned permissions or roles.

(62) The inventory management system of claim 52, wherein said client software allows users to specify a price for goods for sale within an inventory.

Dr. Siegel has analyzed the differences of claim 52 over 67, and believes that one of ordinary skill in the art would not discern any substantive difference, certainly not enough to change his analysis with respect to claim 67. Dependent claim 62 of the '538 Patent merely adds a price for sale within the inventory. Dr. Siegel testifies that such a feature is found in inventory management dating back many decades, if not hundreds of years. This feature too does not change his analysis over claims 67 and 70-76 of the '538 Patent. The specification of a sales price is inherent to the abstract idea of inventory management. Ex. 1006, ¶¶ 75-76. Like claim 67, claims 52 and 62 of the '538 Patent claim subject matter that is patent ineligible under § 101.

a) Claims 52 and 62 Fail the Generic Computer Test

Rather than a method, claim 52 recites an inventory management system, a computer having at least one storage medium, client software that provides an interface to one or more databases that allows users to be classified into groups with permissions or roles assigned thereto, where the software automatically orders inventory that best fulfills the inventory restocking parameters and where the software provides an interface where access is provided to the databases according to permissions or roles. Dr. Siegel testifies that each of these additional limitations

requires only generic computer implementation, as none of them require any specialized hardware or software. In fact, as discussed above with respect to claim 67, the '538 Patent itself does not disclose anything more than generic, functional, and conventional computer implementation. Ex. 1006, ¶ 78.

Dr. Siegel concludes that claim 62's addition of specifying a price for the goods for sale does not require any specialized hardware or software implementation. Only generic computer implementation is required by this claim and that is all that is disclosed by the '538 Patent's description. Ex. 1006, ¶ 79; *see* § IX(B)(1)(a) *supra*.

b) Claims 52 and 62 Fail the Mental Steps Test

Dr. Siegel testifies that the underlying process remains one that can be performed via pen and paper. For example, claim 52's identification of users and allowing users to be classified into groups, where permissions or roles are assigned to such groups, could be performed via pen and paper. An accountant or inventory manager using a ledger could easily accommodate different classifications of users. Also, automatically ordering inventory that best fulfills inventory restocking parameters can be achieved manually by an inventory manager watching his inventory and ordering goods as necessary. Lastly, providing access to the inventory information according to assigned permissions or roles could also be easily accomplished by an inventory manager providing access to only certain

pages of the ledger to certain individuals based on their status or role. Ex. 1006, ¶ 80.

Claim 62 can also be performed via pen and paper. A person could make a notation of the sales price on a pad of paper or a ledger. Ex. 1005, ¶ 80.

c) Claims 52 and 62 Fail the Machine-or-Transformation Test

Dr. Siegel testifies that the addition of an “inventory management system,” “at least one computer having at least one storage medium,” “client software residing on said at least one storage medium providing an interface to said one or more database(s),” as well as “said software automatically” are not central to the claim. Rather, Dr. Siegel explains that one of ordinary skill would recognize that what is central to the claim is the data that is utilized, rather than some technical limitation. These additional limitations are not more than mere trivial recitations and not well integrated with the claim. Claim 62 does not add any additional machine-tying limitations. Neither the additional limitations of claim 52 nor claim 62 involve any transformation. Thus, Dr. Siegel concludes that claims 52 and 62 fail the machine-or-transformation test. Ex. 1006, ¶¶ 81-82.

d) Claims 52 and 62 Fail the Point-of-Novelty Test

Dr. Siegel testifies that the additional limitations of claims 52 and 62 offer nothing more than insignificant, conventional and routine steps that are subsumed as part of the abstract idea. Even if they were not subsumed, the addition of “an

inventory management system,” “at least one computer having at least one storage medium,” “client software residing on said at least one storage medium providing an interface to said one or more database(s),” as well as “said software automatically” are conventional steps that are insignificant and routine. Dr. Siegel testifies that these recitations have been a part of inventory systems for many decades. Moreover, the addition of claim 62’s specifying a price for goods for sale is conventional, insignificant and routine. Such information has been a part of inventory systems for many decades at least and perhaps as old as inventory systems themselves. Ex. 1006, ¶ 83.

e) Claims 52 and 62 Fail the Abstract Idea Test

Dr. Siegel testifies that the additional limitations do not tie claim 52 in any significant way to a practical application. Rather, one of ordinary skill in the art would conclude, as Dr. Siegel does, that claim 52, like claim 67, preempts virtually all uses of the abstract idea of inventory management. The idea of inventory management subsumes the entirety of claim 52. Moreover, claim 62’s addition of a price for goods for sale is well within the scope of the inventory management abstract idea and does not limit the claim to a practical application. Ex. 1006, ¶ 84.

3. Claims 81, 83-85, and 96

Reproduced below is claim 81 in its post-reexamination form (see Ex. 1008) with the variations over claim 67 underlined:

81. A computer program product for managing customer inventory, comprising program instructions stored on at least one computer readable storage medium which when executed cause a computer to:

(a) access, from one or more databases, at least the following stored data:

(1) customer inventory information, the customer inventory information including a number of items at a customer,

(2) inventory and cost information for a plurality of manufacturers, suppliers, or distributors, the inventory information for the plurality of manufacturers, suppliers, or distributors including: a product identifier and a number of items in manufacturer, supplier, or distributor inventory, and

(3) inventory restocking parameters provided by said customer;

(b) evaluate said customer inventory information and inventory or cost information for a plurality of manufacturers, suppliers, or distributors in light of said restocking parameters provided by said customer;

(c) order manufacturer, supplier, or distributor inventory which best fulfills said inventory restocking parameters provided by each said customer;

(d) track inventory items for (1) the number of items at each customer and (2) the number of items at each manufacturer, supplier, or distributor, as inventory items are added to, restocked to, or removed from inventory,

wherein said tracking is executed by detecting each said inventory item and by updating said databases through at least one software interface to said databases;

(e) update said data on said one or more databases; and

(f) provide access to the information in said one or more databases to said customer, manufacturer, supplier, or distributor,

wherein said computer program product allows customers, manufacturers, suppliers, or distributors to be classified into groups, and where permissions or roles are assigned to such groups.

Dr. Siegel testifies that the differences of claim 81 over claim 67 are trivial and do not change his analysis in any way. In other words, claim 81 is not different in substance from claim 67. Such differences boil down to merely a computer-readable medium and updating the databases through a software interface. Ex. 1006, ¶ 86.

a) Claims 83-85 and 96

Petitioner does not analyze separately below dependent claims 83-85 and 96 because they are the substantially the same as claims 71-73 and 62, which have already been discussed above.

b) Claim 81 Fails the Generic Computer Test

Rather than a method, claim 81 recites a computer readable medium as well as a software interface. Dr. Siegel testifies that the “computer program product” recitation requires only generic computer implementation and so does updating the

“databases through at least one software interface.” Such recitations are implemented using only generic computer implementation because they do not require specialized hardware or software. Ex. 1006, ¶ 89.

c) Claim 81 Fails the Mental Steps Test

Dr. Siegel testifies that the underlying process of claim 81 remains one that can be performed via pen and paper, because there is little difference between this claim and the others that he has analyzed. The “computer program product” and “software interface” recitations do not change that. Ex. 1006, ¶ 90.

d) Claim 81 Fails the Machine-or-Transformation Test

Dr. Siegel testifies that the “the computer program product” and “software interface” recitations are not central to the claim. Rather, one of ordinary skill would recognize that what is central to the claim is the data that is utilized, rather than some technical limitation. The few technical limitations recited are trivial and not well integrated into the claim, almost like an afterthought. Moreover, claim 81 does not transform an article into a different state or thing. Ex. 1006, ¶ 91.

e) Claim 81 Fails the Point-of-Novelty Test

Dr. Siegel testifies the “computer program product” and “software interface” limitations of claim 81 are conventional, having been around for many years before the year 2000. Dr. Siegel also states that the limitations are insignificant and routine steps which add virtually nothing to the claim. Ex. 1006, ¶ 92.

f) Claim 81 Fails the Abstract Idea Test

Dr. Siegel testifies that the “computer program product” and “software interface” limitations do not tie claim 81 in any significant way to a practical application. Rather, one of ordinary skill in the art would conclude like he does that claim 81, like claim 67, preempts virtually all uses of the abstract idea of inventory management. The idea of inventory management subsumes the entirety of claim 81. Ex. 1006, ¶ 93.

X. Conclusion

For at least the foregoing reasons, claims 52, 62, 67, 70–76, 81, 83–85, and 96 of the ‘538 Patent recite patent-ineligible subject matter under 35 U.S.C. § 101. Petitioner therefore requests that a post-grant review of these claims be instituted pursuant to 35 U.S.C. § 324 and that the PTAB proceed to cancel the claims discussed above.

Respectfully submitted,

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Petitioner's Exhibit List (December 5, 2014)

PETITIONER'S EXHIBIT LIST

December 5, 2014

- Exhibit 1001 U.S. Patent No. 6,996,538 (for review)
- Exhibit 1002 Transitional Program for Covered Business Method Patents — Definitions of Covered Business Method Patent and Technological Invention, 77 Fed. Reg. 157 (August 14, 2012)
- Exhibit 1003 United States Patent and Trademark Office - Classification Definitions, Class 705
- Exhibit 1004 *A Guide to the Legislative History of the America Invents Act; Part II of II*, 21 Fed. Cir. Bar J. No. 4
- Exhibit 1005 *Unisone Strategic IP, Inc. v. Life Technologies Corporation, et al.*, SDCA, 3:13-CV-1278-GPC-JMA, First Amended Complaint.
- Exhibit 1006 Declaration of Michael Siegel, Ph.D.
- Exhibit 1007 Office Patent Trial Practice Guide, 77 Fed. Reg. 157 (August 14, 2012)
- Exhibit 1008 Selected pages from Reexamination 90/013,050
- Exhibit 1009 Definition of "Inventory Management" - businessdictionary.com
- Exhibit 1010 Ivars Peterson, *From Counting to Writing*, SCIENCE NEWS (March 8, 2006)
- Exhibit 1011 Inventory Management History, Part One, ALMYTA SYSTEMS
- Exhibit 1012 Richard Mattessich, *The Oldest Writings and Inventory Tags of Egypt*, ACCOUNTING HISTORIANS JOURNAL (June 2002)
- Exhibit 1013 The Origins of Writing, ALMYTA SYSTEMS
- Exhibit 1014 Inventory Management History, Part Two, ALMYTA SYSTEMS

- Exhibit 1015 Definition of “Inventory Control” – Merriam-Webster
Unabridged Dictionary
- Exhibit 1016 The History of Accounting, An International Encyclopedia,
edited by Michael Chatfield and Richard Vangermeersch,
Garland Publishing, 1996.
- Exhibit 1017 Inventory Management History, Part Three, ALMYTA SYSTEMS
- Exhibit 1018 Inventory Management History, Part Four, ALMYTA SYSTEMS

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e), the undersigned certifies service of this PETITION UNDER 35 U.S.C. § 321 AND § 18 OF THE LEAHY-SMITH AMERICA INVENTS ACT – TRANSITIONAL PROGRAM FOR COVERED BUSINESS METHOD PATENTS on the counsel of record for the Patent Owner as well as lead litigation counsel by delivering a copy via UPS Next Day Air to the following addresses:

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Respectfully Submitted,

Date: December 5, 2014

/Michael L. Kiklis/

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LIFE TECHNOLOGIES CORPORATION,
Petitioner,

v.

UNISONE STRATEGIC IP, INC.,
Patent Owner.

Case CBM2015-00037
Patent 6,996,538 B2

Before JACQUELINE WRIGHT BONILLA, HYUN J. JUNG, and
NEIL T. POWELL, *Administrative Patent Judges*.

BONILLA, *Administrative Patent Judge*.

DECISION
Institution of Covered Business Method Patent Review
37 C.F.R. § 42.208

INTRODUCTION

A. Background

Life Technologies Corp. (“Petitioner”) filed a Petition requesting covered business method patent review of claims 52, 62, 67, 70–76, 81, 83–85, and 96 of U.S. Patent No. 6,996,538 B2 (Ex. 1001, “the ’538 patent”) (“challenged claims”) under § 18 of the Leahy-Smith America Invents Act (“AIA”).¹ Paper 1 (“Pet.”). Unisone Strategic IP, Inc. (“Patent Owner”) filed a Preliminary Response. Paper 7 (“Prelim. Resp.”).

We have jurisdiction under 35 U.S.C. § 324(a), which provides that a covered business method patent review may not be instituted “unless . . . it is more likely than not that at least 1 of the claims challenged in the petition is unpatentable.”

Upon consideration of the Petition and Preliminary Response, we determine that Petitioner has demonstrated that it is more likely than not that at least one challenged claim is unpatentable. We institute a covered business method review of claims 52, 62, 67, 70–76, 81, 83–85, and 96 of the ’538 patent.

B. Asserted Ground

Petitioner asserts that the challenged claims are unpatentable under 35 U.S.C. § 101 as reciting patent-ineligible subject matter. Pet. 6.

C. Related Matters

The parties indicate that the ’538 patent is the subject of the following district court cases: *Unisone Strategic IP, Inc., v. TraceLink, Inc.*, 3-13-cv-01743 (S.D. Ca.) (2013); *Unisone Strategic IP, Inc. v. Life Technologies*

¹ Pub. L. No. 112–29, 125 Stat. 284, 296–07 (2011).

Corp., 3-13-cv-01278 (S.D. Ca.) (2013). Pet. 4–5 (citing Ex. 1005); Paper 6, 2.

D. The '538 Patent

The '538 patent relates to methods and systems of electronic inventory tracking by a third party, for example via the Internet. Ex. 1001, Abstract, 1:18–20, 46–58. The methods and systems facilitate “inventory management by tracking inventory and automatically contacting suppliers, manufacturers, or distributors when additional supplies are needed.” *Id.* at 1:59–63, 2:45–50. As also described in the specification, “while purchasing is a large part of inventory maintenance, the present invention may also facilitate other transactions,” such as allowing “customers to resell products or equipment to other businesses,” or other communication between customers. *Id.* at 2:7–11; 4:37–51.

Figure 1 in the '538 patent is a block diagram showing “the major hardware components of the present invention.” *Id.* at 2:23–24; 2:54–55.

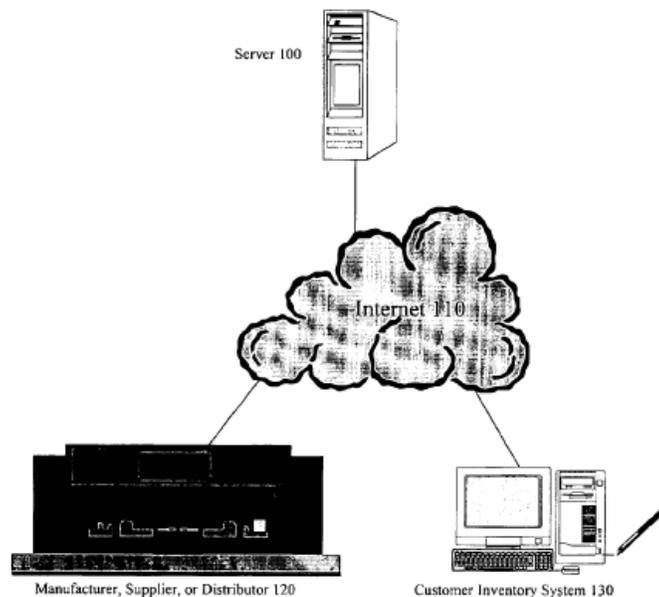


Figure 1 depicts Server 100, Internet 110, and Customer Inventory System 130, which “may be used to track inventory, place special orders, and interact with other customers.” *Id.* at Fig. 1, 2:54–60.

As part of Customer Inventory System 130, a “client may include custom software, such as an application written in Visual Basic, JAVA, or C; commercial software, such as a web page accessible through a web browser; or a combination of custom and commercial software.” *Id.* at 2:58–3:2. Customer Inventory System 130 also “may allow manual inventory tracking, semi-automated inventory tracking, or inventory may be dispensed using automated systems.” *Id.* at 3:3–10.

Figure 2 in the ’538 patent presents an embodiment of Server 100, and “software components of the present invention.” *Id.* at 2:25–27, 4:58–65. In a block diagram format, Figure 2 generally depicts Firewall 210, Web Server 220, Database Server 230, and Application Server 240. *Id.* at 4:61–65. The Specification indicates that examples of Web Server 220 and Database Server 230 include commercially available software. *Id.* at 5:1–25.

As described in the specification, “Application Server 240 may contain business rules associated with the present invention, which can be used to interpret Database Server 230 data,” and also may monitor inventory levels, contact vendors, adjust inventory information, and facilitate resale of equipment or products, based on information stored in Database Server 230. *Id.* at 5:26–37. “Web Server 220, Database Server 230, and Application Server 240 each represent software which may run on the same computer, or on multiple computers.” *Id.* at 5:38–42.

E. Illustrative Claim

As noted above, Petitioner challenges claims 52, 62, 67, 70–76, 81, 83–85, and 96. Claims 52 (system), 67 (method), and 81 (computer program product) are independent. Claim 67 is illustrative of the claimed subject matter and is reproduced below, as allowed in *ex parte* Reexamination Control No. 90/013,050 (Ex. 1008):

67. A method for inventory management, comprising:

(a) collecting and storing, on one or more databases having client software, at least the following data:

(1) customer inventory information, the customer inventory information including a number of items at a customer,

(2) inventory and cost information for a plurality of manufacturers, suppliers, or distributors, the inventory information for the plurality of manufacturers, suppliers, or distributors including: a product identifier and a number of items in manufacturer, supplier or distributor inventory, and

(3) inventory restocking parameters provided by said customer;

(b) evaluating via at least one computer said customer inventory information and inventory or cost information for a plurality of manufacturers, suppliers, or distributors in light of said restocking parameters provided by said customer;

(c) ordering manufacturer, supplier, or distributor inventory which best fulfills said inventory restocking parameters provided by said customer;

(d) tracking inventory items in said databases for (1) the number of items at said customer and (2) the number of items at said manufacturer, supplier, or distributor, as inventory items are added to, restocked to, or removed from said inventories;

(e) updating said data on said one or more databases, using information obtained in said inventory tracking, through at least one software interface to said databases; and

(f) providing access via client software to information in said one or more databases to each said customer, manufacturer, supplier, or distributor,

wherein said client software allows one or more customers, manufacturers, suppliers, or distributors to be classified into groups, and where permissions or roles are assigned to such groups.

Ex. 1008, 22–23; 33, 4:5–43.

ANALYSIS

A. Claim Construction

While Petitioner and Patent Owner present constructions for several claim terms, no terms require express construction for purposes of this Decision.

B. Covered Business Method Patent

Section 18 of the AIA provides for the creation of a transitional program for reviewing covered business method patents. A “covered business method patent” is a patent that “claims a method or corresponding apparatus for performing data processing or other operations used in the practice, administration, or management of a financial product or service, except that the term does not include patents for technological inventions.” AIA § 18(d)(1); *see* 37 C.F.R. § 42.301(a). A patent need have only one claim directed to a covered business method to be eligible for review. *See* Transitional Program for Covered Business Method Patents—Definitions of Covered Business Method Patent and Technological Invention; Final Rule, 77 Fed. Reg. 48,734, 48,736 (Aug. 14, 2012) (“CBM Rules”) (Comment 8).

1. Financial Product or Service

Petitioner asserts that the challenged claims are directed to “methods and computer systems for activities that are financial in nature, i.e., inventory management to support product sales, including customer interfaces and data management related thereto, as well as tracking and storing cost information related to those products.” Pet. 6 (citing Ex. 1006 ¶ 35). In addition to the classification of the ’583 patent in Class 705, Petitioner points to claim language such as “collecting and storing . . . inventory and cost information,” as recited in claim 67. *Id.* at 7–8. Petitioner also points to where the specification states that “purchasing is a large part of inventory maintenance,” and states that the invention facilitates the resale of products. *Id.* at 8–9 (citing Ex. 1001, 2:7–19, 5:31–36).

Patent Owner asserts that Petitioner does not establish that any challenged claim satisfies the financial in nature requirement of AIA § 18(d)(1). Prelim. Resp. 21–22. For example, Patent Owner argues that patent classification and the cited portions of the ’538 patent specification are not dispositive. *Id.* at 21. In addition, Patent Owner contends that “simply storing price data is insufficient since the claims address computer technology that tracks and orders inventory rather than payment for such inventory.” *Id.* at 22 (citation omitted). According to Patent Owner, because the claims relate to inventory tracking and ordering, but not payment, the claims do not recite a covered business method as defined by the AIA. *Id.*

A prerequisite for a covered business method patent includes a “method or corresponding apparatus for performing data processing or other operations used in the practice, administration, or management of a financial

product or service.” AIA § 18(d)(1). The legislative history of AIA indicates that the phrase “financial product or service” is not limited to the products or services of the “financial services industry,” and is to be interpreted broadly. CBM Rules, 77 Fed. Reg. at 48,735–36. For example, the “legislative history explains that the definition of covered business method patent was drafted to encompass patents ‘claiming activities that are financial in nature, incidental to a financial activity or complementary to a financial activity.’” *Id.* (citing 157 Cong. Rec. S5432 (daily ed. Sept. 8, 2011) (statement of Sen. Schumer)).

Based on this record, we agree with Petitioner that subject matter recited in the challenged claims is directed to activities that are financial in nature. For example, claim 67 recites “*collecting and storing, on one or more databases . . . inventory and cost information*” and “*inventory restocking parameters provided by said customer,*” and “*ordering . . . inventory which best fulfills said inventory restocking parameters provided by said customer,*” and “*providing access via client software to information in said one or more databases to each said customer.*” Ex. 1008, 22–23; 33, 4:5–43 (emphases added).

We are persuaded that collecting cost information and providing a customer access to that information amounts to a financial service, and that ordering inventory based on information provided by a customer is a financial activity. This is consistent with the specification of the ’538 patent, which confirms the challenged claims’ connection to financial activities by stating that “purchasing is a large part of inventory maintenance,” the subject matter of the challenged claims directed to “inventory management.” Ex. 1001, 2:7–11; 4:37–51.

We are not persuaded by Patent Owner’s assertion that the challenged claims do not recite “payment.” Section 18(d)(1) of the AIA does not include such a requirement. Based on the particular facts of this case, we determine that because claim 67 recites, *inter alia*, ordering products based on collected “inventory restocking parameters,” which necessarily relates in nature to the financial sale of products, it claims “activities that are financial in nature,” and the first part of the definition of § 18(d)(1) is satisfied.

2. *Exclusion for Technological Inventions*

Petitioner asserts that the challenged claims do not fall within § 18(d)(1)’s exclusion for “technological inventions.” Pet. 10–13. In this regard, Petitioner contends that the claims (1) fail to recite a novel and unobvious technological feature, and (2) fail to recite a technical solution that solves a technical problem. *Id.* at 10 (citing 37 C.F.R. § 42.301).

In relation to the first prong, Petitioner points to a Notice of Intent to Issue a reexamination certificate in relation to the ’538 patent. Pet. 10–11 (quoting Ex. 1008). Petitioner contends, when allowing the reexamined claims, the Examiner “believed that the patentable features were not a new computer, a new database or anything technical, but rather . . . based upon *the kind of information* in the system.” *Id.* at 11; Ex. 1008. Petitioner further contends that, even assuming the method of using certain inventory-related data was novel, such data are not “technological” features. Pet. 11–12. In relation to the second prong, Petitioner further contends that the ’538 patent “does not claim an improvement in any computer-related technology but merely the use of various inventory-related information with already existing computer technology.” *Id.* at 12 (citing Ex. 1006, ¶ 36).

Patent Owner responds that Petitioner fails to provide sufficient claim analysis and mischaracterizes the Examiner's statements made during reexamination. Prelim. Resp. 9–14, 16–17. Regarding the first prong of § 42.301(b), Patent Owner points to certain claim language, such as the “dynamic inventory ordering that are included in each challenged claim,” and points to the steps of evaluating and ordering by software in claim 52, which is directed to an inventory management system involving a computer. *Id.* at 15–16. Patent Owner also points to how the system of claim 52 “tracks inventory items” in databases, “updates” data on the databases using software, “identifies users and allows users to be classified into groups,” and “permissions or roles are assigned to such groups.” *Id.* at 16.

Regarding the second prong, Patent Owner contends that Petitioner “ignores numerous technical aspects of the claim limitations,” such as those discussed above. *Id.* at 18–19. Patent Owner argues that “the claims do not merely recite generic computer hardware that stores data,” but rather, when viewed as whole, recite “a specially-programmed computer system” that completes the steps recited in the claims, and therefore provides technical solutions. *Id.* at 19–20.

To be eligible for review, a patent need only have one claim directed to a covered business method, and not a technological invention. CBM Rules, 77 Fed. Reg. at 48,736. Thus, for the purposes of our analysis here, we focus on method claim 67. In relation to technological features, claim 67 recites “one or more databases,” “client software,” and “at least one computer.” We are persuaded that claim 67 as a whole does not recite a technological feature that is novel and unobvious over the prior art, and does not recite a technical solution that solves a technical problem.

Regarding the first prong, the specification does not indicate, nor does Patent Owner provide any support, that the recited technological features are novel and nonobvious. Rather, the '538 patent clarifies that the asserted novelty of the invention is not in any specific improvement of software or hardware, but in a method of collecting, evaluating, tracking, updating, and providing access to specific inventory-related information, and ordering inventory based on certain information.

For example, as noted above, the specification describes Server 100, Internet 100, and Customer Inventory System 130 in general terms, as depicted in Figure 1, indicating that Customer Inventory System 130 “may be used to track inventory, place special orders, and interact with other customers.” Ex.1001, Fig. 1, 2:54–60. The specification states that Customer Inventory System 130 may include “commercial software, such as a web page accessible through a web browser,” i.e., software already commercially available to the public. *Id.* at 2:58–3:2. Figure 2 presents an embodiment of Server 100 and “software components of the present invention,” generally depicting Web Server 220, Database Server 230, and Application Server 240. *Id.* at 2:25–27, 4:58–65; Fig. 2. The specification indicates that examples of Web Server 220 and Database Server 230 include commercially available software. *Id.* at 5:1–25.

The specification states that “Application Server 240 may contain business rules associated with the present invention, which can be used to interpret Database Server 230 data,” and monitor inventory, for example, based on information stored in Database Server 230. *Id.* at 5:26–37. Nothing in the specification, however, indicates that any server or database hardware itself is novel or non-obvious, rather than information placed on a

database and monitored and interpreted by a server. Consistently, the specification indicates generally that “Web Server 220, Database Server 230, and Application Server 240 each represent software which may run on the same computer, or on multiple computers.” *Id.* at 5:38–42.

Along these lines, we agree with Petitioner that during reexamination, the Examiner indicated it was data used in the method, not anything of a technical nature, that was novel and non-obvious over cited prior art. Pet. 10–11; Ex. 1008, 5–7. Thus, we agree that claim 67 fails to recite a novel and unobvious technological feature.

We further agree that claim 67 fails to recite a technical solution that solves a technical problem. We are persuaded that a method of collecting, evaluating, tracking, updating, and providing access to specific inventory-related information, and ordering inventory based on certain information, does not relate to a technical problem. Pet. 12. We also are persuaded, as Petitioner contends, that challenged claim 67 “does not claim an improvement in any computer-related technology but merely the use of various inventory-related information with already existing computer technology.” *Id.*

Thus, based on the particular facts of this case, we conclude that challenged claim 67 does not recite a technological invention.

3. Conclusion

In view of the foregoing, we conclude that the '538 patent is a covered business method patent under AIA § 18(d)(1) and is eligible for review using the transitional covered business method patent program.

C. 35 U.S.C. § 101

Petitioner challenges claims 52, 62, 67, 70–76, 81, 83–85, and 96 as being directed to patent-ineligible subject matter under 35 U.S.C. § 101. Pet. 24–57. Patent Owner contends otherwise. *See* Prelim. Resp. 31–52.

Analyzing the challenged claims using the two-step process applied in *Alice Corp. Pty, Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347 (2014), Petitioner asserts that all challenged claims are directed to an abstract idea without additional elements that transform the claims into a patent-eligible application of that idea. Pet. 24–57. Specifically, Petitioner argues that the challenged claims are directed to the abstract idea of “inventory management.” *Id.* at 25.

Under 35 U.S.C. § 101, we must first identify whether an invention fits within one of the four statutorily provided categories of patent-eligibility: “processes, machines, manufactures, and compositions of matter.” *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 713–714 (Fed. Cir. 2014). Here, each of the challenged claims recites a “process” or “machine,” i.e., a “system” comprising “at least one computer” (claim 52), a “method for inventory management” (claim 67), or a “computer program product” comprising “at least one computer readable storage medium” (claim 81), under § 101. Section 101, however, “contains an important implicit exception [to subject matter eligibility]: Laws of nature, natural phenomena, and abstract ideas are not patentable.” *Alice*, 134 S. Ct. at 2354 (quoting *Assoc. for Molecular Pathology v. Myriad Genetics, Inc.*, 133 S. Ct. 2107, 2116 (2013) (internal quotation marks omitted)).

In *Alice*, the Supreme Court reiterated the framework set forth previously in *Mayo Collaborative Servs. v. Prometheus Labs.*, 132 S. Ct.

1289 (2012) “for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts.” *Alice*, 134 S. Ct. at 2355. The first step in the analysis is to “determine whether the claims at issue are directed to one of those patent-ineligible concepts.” *Id.* (citing *Mayo*, 132 S.Ct. at 1296–97). If so, the second step in the analysis is to consider the elements of the claims “individually and ‘as an ordered combination’ to determine whether there are additional elements [that] ‘transform the nature of the claim’ into a patent-eligible application.” *Id.* (quoting *Mayo*, 132 S. Ct. at 1291, 1298). 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 on the [ineligible concept] itself.’” *Id.* (brackets in original) (quoting *Mayo*, 132 S. Ct. at 1294) (footnote omitted).

1. *Claims 67 and 70–76*

Petitioner asserts that all challenged claims recite an abstract idea because “they are directed to the fundamental business and economic practice of inventory management, a ‘fundamental economic practice long prevalent in our system of commerce’” under *Alice*. Pet. 26 (citing *Alice*, 134 S. Ct. at 2356 (citation omitted)).

Claim 67 recites a “method for inventory management” comprising:

- (a) “*collecting and storing*, on one or more databases having client software” certain data, including customer inventory information, inventory and cost information, and “inventory restocking parameters provided by said customer,”

- (b) “*evaluating* via at least one computer” such information,
- (c) “*ordering* . . . inventory which best fulfills said inventory restocking parameters provided by said customer,”
- (d) “*tracking* inventory items in said databases,”
- (e) “*updating* said data on said one or more databases,” and
- (f) “*providing access* via client software to information,” wherein the software allows customers, etc. “to be classified into groups, and where permissions or roles are assigned to such groups.”

Ex. 1008, 22–23; 33, 4:5–43 (emphases added).

We are persuaded, on this record, that claim 67 is directed to the abstract idea of managing inventory in view of information. We are persuaded that managing inventory in view of collected and analyzed customer inventory, cost information, restocking information provided by a customer, as recited in claim 67, describes the basic concept of inventory management, i.e., a “fundamental economic practice.” *Alice*, 134 S. Ct. at 2356. The method of claim 67 is sufficiently similar in this regard to the method of hedging against financial risk at issue in *Bilski v. Kappos*, 130 S.Ct. 3218 (2010), and the idea of intermediated settlement at issue in *Alice*, 134 S. Ct. at 2356–57 (discussing *Bilski*). See also *Accenture Global Servs., GmbH v. Guidewire Software, Inc.*, 728 F.3d 1336, 1344 (Fed. Cir. 2013) (holding the abstract idea at the heart of a system claim to be “generating tasks [based on] rules . . . to be completed upon the occurrence of an event” (citation omitted)).

Patent Owner contends that “[l]ooking at the claims as a whole, it is clear they are directed to a computer-implemented method utilizing particular hardware components” to complete the recited steps of the method of claim 67. Prelim. Resp. 34–35. We are persuaded sufficiently, however,

that the method of claim 67 requires “generic computer implementation . . . not specialized hardware or . . . software.” Pet. 30. As discussed above, the specification of the ’538 patent indicates that the server, internet and customer inventory system used in the method, as depicted in Figure 1, involve general computer components.

For example, the specification states that Customer Inventory System 130 may include software already commercially available to the public. Ex. 1001, 2:58–3:2. In addition, the specification describes “software components of the present invention” in general terms, depicting Web Server 220, Database Server 230, and Application Server 240, as examples. *Id.* at 2:25–27, 4:58–65; Fig. 2. The specification indicates that Web Server 220 and Database Server 230 include commercially available software, i.e., general software available for purchase from companies. *Id.* at 5:1–25.

We note that the specification states that “Application Server 240 may contain business rules associated with the present invention, which can be used to interpret Database Server 230 data,” and monitor inventory, for example, based on information stored in Database Server 230. *Id.* at 5:26–42. As discussed above, however, the specification does not indicate that any specific server, database, or computer hardware itself is necessary. Rather, the specification provides specificity in relation to information placed on a database and monitored and interpreted by a server. *See also* Pet. 30–37 (discussing other aspects of the ’539 patent specification).

Claims 70–76 depend from claim 67. Those claims further recite “forecasting inventory usage or inventory availability” based on information (claim 70), client software that “monitors inventory levels and reports anticipated shortages” (claim 72) or “allows users to order new inventory

items or to supplement inventory” (claim 73), or additional details regarding collecting and storing, or updating, information recited in claim 67 (claims 74–76). Once again, such features do not require any specific server, database, or computer hardware *per se*, but rather provide specificity only in relation to recited information and how it is used.

Thus, we conclude that the first step in the *Alice/Mayo* test is met for claims 67 and 70–76.

Accordingly, we next consider whether elements of those claims “individually and ‘as an ordered combination’” provide additional elements that “‘transform the nature of the claim’ into a patent-eligible application.” *Alice*, 134 S. Ct. at 2355 (quoting *Mayo*, 132 S. Ct. at 1291, 1298).

Not every included feature will suffice. Those additional elements must be more than “well-understood, routine, conventional activity.” *Mayo*, 132 S. Ct. at 1298; *see Ultramercial*, 772 F.3d at 716 (“[E]ach of those eleven steps merely instructs the practitioner to implement the abstract idea with ‘routine, conventional activit[ies],’ which is insufficient to transform the patent-ineligible abstract idea into patent-eligible subject matter.” (second alteration in original)); *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat. Ass’n*, 776 F.3d 1343, 1348 (Fed. Cir. 2014) (“[Patentee] conceded at oral argument that the use of a scanner or other digitizing device to extract data from a document was well-known at the time of filing, as was the ability of computers to translate the shapes on a physical page into typeface characters” (citations omitted)); *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1355 (Fed. Cir. 2014) (holding that the subject of the patent claims was “beyond question of ancient lineage” (citation omitted)).

We are persuaded that each of steps (a)–(f) of claim 67 instructs a practitioner to implement an abstract idea, i.e., inventory management based on certain information, using “one or more databases having client software” and “at least one computer.” We also are persuaded, based on the record before us, that such databases, software and computer were well-known at the time of filing, i.e., “routine, conventional” activities to implement a method of collecting, storing, and analyzing (evaluating, ordering products based on, tracking, updating, and providing access to) information or data. Pet. 37–38; *Mayo*, 132 S. Ct. at 1298. We are persuaded that the recited steps are not tied to any particular hardware, software or algorithm, and description in the ’538 patent is consistent with that conclusion. Pet. 38.

Patent Owner argues that Petitioner “omits addressing aspects of the claims and patent specification that would undermine [its] argument.” Prelim. Resp. 42. For example, Patent Owner contends that Petitioner ignores “Application Server 240 which makes up a component of the disclosed invention.” *Id.* at 42–43. Patent Owner asserts that Application Server 240 provides aspects of the recited functions, including receiving requests, interpreting and adjusting collected and stored information, monitoring inventory levels, contacting vendors, and facilitating resale of products. *Id.*

As noted above, however, nothing in claim 67 (or its dependent claims 70–76), nor the specification of the ’538 patent, indicates that any specific server is necessary when implementing Application Server 240. Rather, the claims, which recite “client software” or “software” generally, as well as the specification, indicate specificity only in relation to information collected, stored, evaluated, tracked, updated, or otherwise acted upon, by

the software (server). Consistently, the specification indicates generally that “Web Server 220, Database Server 230, and Application Server 240 each represent software which may run on the same computer, or on multiple computers.” Ex. 1001, 5:38–42. *See also* Pet. 33–37 (discussing “Server 100” as presented in Figure 2 and otherwise described in the ’539 patent specification).

Based on the current record, we also are persuaded by Petitioner’s contentions that, although claim 67 recites “databases,” “software” and “computer” generally, the recited steps can be performed mentally or using pen and paper. Pet. 39–41 (citing *Gottschalk v. Benson*, 409 U.S. 63, 66–67 (1972)). For example, the record indicates that one can order inventory using pen and paper or by telephone (step (c)), manually provide access to written down inventory information, and mentally classify customers, for example, into groups having assigned permission or roles (step (f)). *Id.* We likewise are persuaded that features recited in dependent claims 70–76 (“forecasting” inventory usage or availability (claim 70), software that “monitors” inventory and “generates orders” (claims 71, 72), “allows users to order” or “supplement inventory” (claim 73), and collecting and storing or updating additional information (claims 74–76)) can be performed mentally or using pen and paper. *Id.* at 41–42.

In response, Patent Owner contends that Petitioner’s “approach fails to analyze whether the claim elements ‘as an ordered combination’ present an inventive concept.” Prelim. Resp. 45 (quoting *Alice*, 134 S. Ct. at 2355). Patent Owner contends that “[i]t would not be possible for a third-party, or any entity, attempting to practice the claimed invention by hand to simultaneously track supply-side and customer-side inventory needs and

availability, pricing, and reordering parameters in a way that would allow the burden of ordering goods to be displaced from a customer, not to mention implementing the additional grouping and custom access-control limitations.” *Id.* at 45–46. We are not persuaded, as claim 67 (and dependent claims 70–76) do not require action by a third-party, nor require simultaneously performing steps (a)–(f) or other steps recited in dependent claims.

Having considered the information provided in the Petition and the Preliminary Response, we are persuaded that Petitioner has demonstrated that it is more likely than not that challenged claims 67 and 70–76 are not directed to patent-eligible subject matter and, therefore, are unpatentable under 35 U.S.C. § 101.

2. *Claims 81, 83–85, and 96*

Petitioner asserts that independent “claim 81 is not different in substance from claim 67,” and that “differences boil down to merely a computer-readable medium and updating the databases through a software interface.” Pet. 55. In addition, Petitioner contends that, although claim 81 recites a “computer program product” and “software interface,” steps (a)–(f), like steps (a)–(f) in claim 67, can be performed via pen and paper. Pet. 54–56. Petitioner also asserts that it “does not analyze separately . . . dependent claims 83–85 and 96 because they are . . . substantially the same as claims 71–73 and 62,” addressed elsewhere in the Petition. *Id.* at 55.

Patent Owner responds that Petitioner’s approach “ignores the actual identified claim language, such as the requirement that ‘tracking is executed by detecting said inventory item.’” Prelim. Resp. 39. Patent Owner also argues that Petitioner “provides little explanation as to why this limitation or

any of the others identified as differences from method claim 67 are not substantial.” *Id.*

We agree with Petitioner that claim 81 is similar to method claim 67, except that claim 81 recites a “computer program product” comprising “program instructions stored on at least one computer readable storage medium,” that “cause a computer” to engage in steps (a)–(f). Step (a) of claim 81 recites accessing from databases the same type of data recited in step (a) of claim 67. Steps (b)–(f) are similar to those same steps in claim 67, except that the tracking step further recites it “is executed by detecting each said inventory item and by updating said databases through at least one software interface to said databases.”

As with claim 67, we are persuaded that steps (a)–(f) of claim 81 instruct a practitioner to implement an abstract idea, i.e., a method for managing customer inventory based on certain information, using a “computer program product,” “at least one computer readable storage medium” executed on a “computer,” and “at least one software interface.” For the same reasons discussed above regarding claim 67 (and its challenged dependent claims), we agree that claim 81 (and dependent claims 83–85, and 96) do not require any specific computer program product, storage medium, computer, and software interface *per se*, but rather provide specificity only in relation to recited information and how it is used. Thus, we conclude that the first prong in the *Alice/Mayo* test is met for claims 81, 83–85, and 96.

In relation to the second prong in *Alice/Mayo*, we also are persuaded that such computer program product, storage medium, computer, and software interface were well-known at the time of filing, i.e., “routine, conventional” activities to implement a method of accessing and analyzing,

or taking action based on (evaluating, ordering inventory based on, tracking, updating, and providing access to), information or data. Pet. 55–56; *Mayo*, 132 S. Ct. at 1298. We are persuaded that the recited steps are not tied to any particular hardware, software or algorithm, and descriptions in the ’538 patent are consistent with that conclusion, for the same reasons discussed above in relation to claim 67. Pet. 30–38. Based on the record before us, the additional feature in claim 81 that “tracking is executed by detecting said inventory item,” as noted by Patent Owner (Prelim. Resp. 39), does not change our analysis in this regard, even if that feature is not recited in method claim 67.

Based on the current record, we are also persuaded by Petitioner’s contentions that, although claim 81 recites a “computer program product,” “computer readable storage medium,” “computer,” and “software interface” generally, the recited steps can be performed mentally or using pen and paper. Pet. 55–56, 40–42. For example, one can manually access written down inventory information (step (a)), order inventory, and evaluate, track, detect, update, and provide access to inventory information or items using pen and paper (steps (b)–(f)), as well as mentally classify customers, for example, into groups having assigned permission or roles (step (f)). *Id.*

We likewise are persuaded that the record sufficiently establishes that, like other challenged dependent claims, features recited in dependent claims 83–85 and 96 (“monitoring inventory levels” and “reporting anticipated shortages” or “generating orders” (claims 83, 84), “allowing users to order” or “supplement inventory” (claim 85), and “allowing users to specify a price for goods” (claim 96)) can be performed mentally or using pen and paper. Pet. 55, 41–42, 52.

Having considered the information provided in the Petition and the Preliminary Response, we are persuaded that Petitioner has demonstrated that it is more likely than not that challenged claims 81, 83–85, and 96 are not directed to patent-eligible subject matter and, therefore, are unpatentable under 35 U.S.C. § 101.

3. Claims 52 and 62

Petitioner asserts that “one of ordinary skill in the art would not discern any substantive difference” between system claim 52 and method claim 67. Pet. 50. Petitioner also contends that certain limitations recited in claim 52 relating to a computer having at least one storage medium, client software, and software interface again require only generic computer implementation, and not any specialized hardware or software. *Id.* at 50–51. Petitioner also contends that the underlying process of claim 52, such as “identification of users and allowing users to be classified into groups, where permissions or roles are assigned to such groups, could be performed via pen and paper.” *Id.* at 51–52.

Patent Owner responds that Petitioner “focuses almost its entire analysis on claim 67, a method claim, providing only a cursory analysis,” treating system claim 52 as substantially identical to method claim 67. Prelim. Resp. 37. Patent Owner points out that claim 52 recites a number of limitations lacking in claim 67 relating to the recited “client software.” *Id.* at 38. Patent Owner contends that Petitioner, despite acknowledging differences, “provides little substantive analysis regarding any of these limitations” or “analysis of claim 57 as a whole.” *Id.* at 39.

We agree with Petitioner that claim 52 is similar to method claim 67. For example, recited “data” to be stored is identical, *see* (b)(1)–(3) in claim

52 and (a)(1)–(3) in claim 67. Claim 52 similarly recites allowing users to be classified into groups, where permissions or roles are assigned to such groups, *see* (c) in claim 52 and (f) in claim 67, as well as evaluating, tracking, and updating similar inventory information, and ordering inventory based on “inventory restocking parameters provided by said customer,” *see* (c)(i)–(iv) in claim 52, and (b)–(e) in claim 67.

In addition, contrary to Patent Owner’s contentions, Petitioner expressly refers to the very limitations in claims 52 and 62 that Patent Owner asserts differ from claim 67 when stating that “each of these additional limitations requires only generic computer implementation, as none of them require[s] any specialized hardware or software.” Pet. 50–51; Prelim. Resp. 38. Petitioner refers to the additional limitations in particular, even as it relies on previous analysis regarding claim 67 as to why certain claim language (“client software,” “storage medium,” and software “interface”), in view of the ’538 patent specification, supports its assertion. *See* Pet. 30–37 (discussing “major hardware components of the present invention,” as described in the specification). Petitioner also further contends, sufficiently, that the additional limitations in those claims (as compared to claim 67), again mentioned with particularity, can all be performed by pen and paper, and therefore qualify as mental steps. *Id.* at 51–52.

Based on the record before us, in view of the Petition and Preliminary Response, and for the same reasons discussed above regarding claims 67 and 81 and their challenged dependent claims, we are persuaded that Petitioner sufficiently establishes that it is more likely than not that claims 52 and 62 are unpatentable under § 101.

We note that Patent Owner discusses *DDR Holdings*, which concluded that a claim directed to a “system useful in an outsource provider serving web pages” was patent-eligible under § 101. Prelim. Resp. 35–36, 50 (citing *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1258–59 (2014)). Petitioner does not mention this case, as the Federal Circuit issued its decision in *DDR Holdings* on December 5, 2014, the same day that Petitioner filed its Petition. Pet. 60. We note, however, that in *DDR Holdings*, the Federal Circuit stated that “the claimed solution” in that case was “necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks.” *DDR Holdings*, 773 F.3d at 1257.

Based on the record before us, we are not persuaded that the holding in *DDR Holdings*, addressing claims of a different type, dictates that we decline to institute a trial in the current case, relating to claims directed to inventory management. In addition, we are persuaded that Petitioner has demonstrated that it is more likely than not that the “computer,” “storage medium,” “client software,” and software “interface” components of claims 52 and 62 are functional and generic, and correspond to conventional computer implementation. Pet. 50–51; *see also Alice* 134 S.Ct. at 2360 (stating “the system claims recite a handful of generic computer components configured to implement the same [abstract] idea”).

Having considered the information provided in the Petition and the Preliminary Response, we are persuaded that Petitioner has demonstrated that it is more likely than not that challenged claims 52 and 62 are not directed to patent-eligible subject matter and, therefore, are unpatentable under 35 U.S.C. § 101.

4. Conclusion

On this record, Petitioner has established that it is more likely than not that claims 52, 62, 67, 70–76, 81, 83–85, and 96 of the '538 patent are unpatentable under 35 U.S.C. § 101.

CONCLUSION

For the foregoing reasons, we determine that the information presented in the Petition establishes that it is more likely than not that Petitioner would prevail in establishing the unpatentability of claims 52, 62, 67, 70–76, 81, 83–85, and 96 of the '538 patent.

The Board has not made a final determination on the patentability of any challenged claims.

ORDER

For the reasons given, it is:

ORDERED that a covered business method patent review is instituted on the ground that claims 52, 62, 67, 70–76, 81, 83–85, and 96 are directed to patent-ineligible subject matter under 35 U.S.C. § 101;

FURTHER ORDERED that no other ground is authorized for covered business method patent review; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 324(d) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial on the grounds of unpatentability authorized above; the trial commencing on the entry date of this Decision.

CBM2015-00037
Patent 6,996,538 B2

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LIFE TECHNOLOGIES CORPORATION,
Petitioner,

v.

UNISONE STRATEGIC IP, INC.,
Patent Owner.

Case CBM2015-00037
Patent No. 6,996,538

PATENT OWNER RESPONSE

Table of Contents

	Page
I. STATEMENT OF PRECISE RELIEF REQUESTED	1
II. INTRODUCTION AND OVERVIEW OF ARGUMENT	1
III. BACKGROUND OF THE RELEVANT TECHNOLOGY	3
A. Origins of VMI	4
B. Traditional Inventory Management Systems	7
1. EDI	7
2. Computerized tracking technology	9
1. Previous attempts to coordinate multiple sellers	9
C. Technical Challenges Facing VMI Systems	10
IV. CLAIM CONSTRUCTION	12
A. Petitioner Failed to Provide Meaningful Claim Construction	13
1. The petition does not account for the claims as a whole	13
2. The petition does not take the specification into account	14
3. “Optimum number or amount” is a red herring	16
B. Specific Terms to be Construed	18
1. “inventory restocking parameters provided by said customer”	18
2. “said software tracks inventory items ... for (1) said customer and (2) said manufacturer, supplier, or distributor”	20
3. “said software provides an interface through which said customer, manufacturer, supplier, or distributor can access the information ... according to said assigned permissions or roles”	21
4. “detecting” (claim 81)	22
V. LIFE TECHNOLOGY LACKS STANDING	23
A. The ‘538 Patent Is Directed to a Technological Invention	24
1. The claimed subject matter as a whole recites technological features that are novel and unobvious over the prior art	24

2.	The claimed subject matter as a whole solves a technical problem using a technical solution	28
B.	The Claims Are Not Directed to a Financial Product or Service	30
VI.	THE CHALLENGED CLAIMS RECITE PATENT ELIGIBLE SUBJECT MATTER	32
A.	The Evidence Submitted by Petitioner Does Not Support a Finding that the Claims are Directed to an Abstract Idea	33
1.	Dr. Siegel’s testimony is not admissible or relevant.....	33
2.	The underlying documents Dr. Siegel relies on are unreliable and inadmissible	38
3.	Petitioner cannot show the claims are directed to an abstract idea without supporting evidence.....	43
B.	The Claims Are Not Directed to an Abstract Idea	44
C.	The Claims Include an Inventive Concept.....	49
VII.	CONCLUSION	56

I. STATEMENT OF PRECISE RELIEF REQUESTED

Life Technologies Corporation (“Petitioner”) petitioned for covered business method (“CBM”) review of claims 52, 62, 67, 70-76, 81, 83-85 and 96 of U.S. Patent No. 6,996,538 (“the ‘538 patent,” Ex. 1001). The Board instituted trial (“Decision,” Paper 18) on the only ground of challenge presented in the petition: that the challenged claims are directed to ineligible subject matter under 35 U.S.C. §101. Unisone requests that the Board dismiss the review or confirm claims 52, 62, 67, 70-76, 81, 83-85 and 96 of the ‘538 patent.

II. INTRODUCTION AND OVERVIEW OF ARGUMENT

The Board should not cancel claims 52, 62, 67, 70-76, 81, 83-85, and 96 of the ‘538 patent on the record in this CBM review. Petitioner not only failed to meet its evidentiary burden, but also fundamentally misinterpreted the technology described and claimed in the ‘538 patent, confusing it with the basic concept of inventory management. In truth, the claimed invention is directed to a number of improvements to then-contemporary electronic inventory control technology, providing solutions to problems found in the relevant field in the late 1990s. While Unisone believes the ground of challenge can be dismissed solely due to Petitioner’s failure to meet its burden in the petition, Unisone submits further rebuttal evidence, including the declaration of its expert, Dr. Douglas Thomas, demonstrating that the challenged claims are not directed to ineligible subject matter.

First, the CBM review should be dismissed because the record never supported institution. Patent eligibility under §101 is a mixed question that requires

determination of disputed underlying facts regarding the particular subject matter and its mode of claiming before any legal conclusion is reached. *Arrhythmia Res. Tech. Inc. v. Corazonix Corp.*, 958 F.2d 1053, 1055 (Fed. Cir. 1992). Petitioner failed to provide more than a mere scintilla of evidence to support a holding of invalidity and what little evidence Petitioner did provide is entitled to no weight. For example, as discussed below, Petitioner’s expert admitted during cross-examination that he is unqualified to testify regarding the history of inventory management, eliminating Petitioner’s primary evidence regarding its “abstract idea” contention. The only probative evidence properly of record supports a holding that the claims define eligible subject matter under §101.

Beyond Petitioner’s failure to provide sufficient evidence to support its asserted challenge, the Board should dismiss this review because the petition misstates the nature of the claimed invention. From the start, the specification identifies the field of the invention as “electronic inventory control.” The inventor did not simply implement inventory management on a computer as Petitioner urges, but rather improved on an existing technology: electronic inventory control. As will be explained in greater detail below, Petitioner has largely ignored express language in the claims and the specification—and has utterly ignored the state of the relevant prior art for electronic inventory control—to create a strawman abstraction. Unisone’s patent has succeeded in both examination and reexamination precisely because it uses then-unconventional combinations of technology to improve on existing technologies for electronic inventory management. The claimed invention stands apart because it does not merely recite

the performance of some business practice known from the pre-Internet world along with the requirement to perform it on the Internet; instead, the claimed solution is necessarily rooted in computer and related technologies in order to overcome problems specifically arising in the realm of electronic inventory control. *Cf. DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257 (Fed. Cir. 2014).

In discussing the prior art, the specification explains that inventory management had been automated, but the implementations were inconvenient for small- and medium-sized enterprises and web-based business-to-business auctions lacked adequate information exchange and security. Ex. 1001, 1:23-2:19. A key aspect of the solution was to implement a network-based, third-party managed, multi-user electronic inventory management system with enhanced information capture and exchange as well as security features to give confidence in the system to users with competing interests. *Cf. Diamond v. Diehr*, 450 U.S. 175, 181, 187 (1981) (rejecting algorithm plus conventional step argument and holding that claimed combination solves problems in the art). The claimed system was an improvement on then-state of the art electronic inventory management technologies. Accordingly, the '538 patent is not even eligible for covered business method review, let alone directed to ineligible subject matter.

III. BACKGROUND OF THE RELEVANT TECHNOLOGY

The '538 patent is directed to the field of electronic inventory control. *See* Ex. 1001, 1:18-20; Ex. 2005 ¶¶ 15-19. Specifically, the patent notes that it improves upon the prior art by providing systems and methods implementing a

type of vendor-managed inventory (“VMI”) that “shift[s] the burden of inventory tracking onto a third-party.” Ex. 1001, 1:45-49.

As explained in the accompanying declaration of Dr. Douglas Thomas (Ex. 2005), VMI refers to an inventory system in which a buyer provides information to another entity to facilitate external control of certain inventory decisions. Ex. 2005 at ¶¶ 23-24. As discussed below, changes in the business and technological landscape of the 1980s and 1990s led to development and adoption of various VMI-enabling technologies. *Id.* at ¶¶ 23-28. While VMI systems provided certain benefits and efficiencies to these supply chains, the new relationships and technologies driving these developments also created new technological challenges that continued to affect companies operating in March 2000. The challenged claims of the ‘538 patent are directed to computerized systems and methods providing a particular type of VMI. *Id.* at ¶¶ 15-19, 65-79.

A. Origins of VMI

As Dr. Thomas explains, at the time of the invention claimed in the ‘538 patent VMI was not a longstanding practice. Ex. 2005 ¶ 24; *see also* Ex. 2008 at 1 (noting in 1998 that VMI was “a new way of doing business”). Prior to the 1980s, inventory decisions for a particular product (i.e., when and how much to buy) were typically made by the buyer of that product, for example retailers. Ex. 2005 ¶ 24. Unlike traditional inventory management, VMI shifted inventory decisions away from the buyer. *Id.*; *see also* Ex. 2009 at 35-36 (“[VMI enables] the seller to monitor inventory levels at the buyer’s stock-keeping locations and assume responsibility for replenishments needed to achieve specified inventory-turn targets

and customer-service levels”); Ex. 2010 at 183 (characterizing VMI as a partnership where “the supplier, usually the manufacturer but sometimes a reseller or distributor, makes the main inventory replenishment decisions for the consuming organization”). In other words, transactions customarily initiated by the buyer are instead initiated by the supplier. Ex. 2005 ¶ 24. This shift in decision-making created new technical requirements for the VMI computer systems that facilitated these processes. *Id.*

Inefficiencies were inherent in many non-VMI inventory management systems. *Id.* at ¶ 25. For example, in non-VMI systems, the buyer would typically communicate demand information to the seller implicitly in the form of purchase orders. *Id.*; *see also* Ex. 2011 at 4. As noted in the relevant literature, restricting the availability of the buyer’s inventory information in this manner can distort the perceived demand and inject uncertainty and inefficiencies into the supply chain. Ex. 2005 ¶ 25; Ex. 2011 at 4-5; *see also* Ex. 2012 at 433; Ex. 2009 at 36.

Certain forms of VMI emerged as a response to these inefficiencies in the late 1980s and early 1990s. Ex. 2005 ¶ 26. For example, supplier-managed inventory was popularized in the late 1980s by Wal-Mart, Procter & Gamble, and Chrysler. *Id.*; Ex. 2010 at 183; Ex. 2013 at 456. The grocery and garment industries also used VMI to provide faster restocking. Ex. 2005 ¶ 26; Ex. 2010 at 183. VMI systems provided many benefits, such as improving retail customers’ opportunities to purchase a seller’s products, helping retailers manage inventory more effectively, improving the seller’s production scheduling, and reducing uncertainty regarding inventory turnover. Ex. 2005 ¶ 26; Ex. 2012 at 432-33. VMI

systems could also provide more accurate information, at a lower cost, when accessing data from multiple buyers. Ex. 2005 ¶ 26; Ex. 2012 at 432-33. Notably, however, traditional VMI systems were typically limited to data sharing with a single seller. Ex. 2005 ¶ 26; *see also* Ex. 2010 at 188 (Fig. 1).

Dr. Thomas explains that, while some sellers initially resisted the push to adopt VMI, such systems provided benefits to sellers as well. Ex. 2005 ¶ 27. For example, sellers could increase the availability of their brand in retail locations, obtain more useful data regarding actual sales instead of relying on retailers' restocking orders, and reduce opportunities and incentives for retailers to manipulate information sent to suppliers in the inventory management process to their advantage. *Id.*; *see also* Ex. 2012 at 431-33; Ex. 2008 at 1.

The development of VMI systems in the 1980s and 1990s was largely driven or enabled by corresponding developments in computer technology. Ex. 2005 ¶ 28. For example, leading up to this period the information sharing underlying coordinated supply chain management required significant investments that hindered the feasibility of such systems. *Id.*; *see also* Ex. 2011 at 2. As of 2000, several "recent advancements" in technology had driven the development of such systems, including client-server architectures, the Internet and the adoption of the TCP/IP standard, relational database management systems, object-oriented programming environments, wireless communications networks, and electronic data interchange (EDI). Ex. 2011 at 2; Ex. 2005 ¶ 28. EDI in particular is discussed in more detail below (see section III(B)(1)), and is often associated with VMI. Ex. 2005 ¶ 28; Ex. 2010 at 187. Increased adoption of EDI enabled greater use of VMI

systems in the 1980s and 1990s. *See* Ex. 2005 at ¶ 28; *see also* Ex. 2011 at 2.

B. Traditional Inventory Management Systems

Prior to March 2000, electronic inventory management was an active field in which people sought to improve inventory management practices through the use of computer technology. Ex. 2005 ¶ 29. However, as explained below, existing inventory management systems had not solved certain problems in the field. For example, EDI enabled certain efficiencies, but these efficiencies were impractical for smaller companies in the telecommunications environment of the 1980s and 1990s. *Id.* Computerized inventory tracking provided other technological improvements for managing inventory, but again, the full scope of the benefits derived from such technological advancements was often impractical for smaller companies, which did not have the capacity to develop integrated inventory management computer systems that could fully utilize these technologies. *Id.* Moreover, secure and efficient collaboration with multiple sellers via a third-party computer system had not yet been achieved despite experiments with coordination between sellers such as category captainship. *Id.*

1. EDI

EDI was an early example of a technology used by companies to drive efficiencies in supply chain management, providing a standardized format for exchanging commercial information. Ex. 2005 ¶ 30. For example, buyers and sellers could use EDI to exchange invoices or other standard communications related to inventory management such as retailer warehouse withdrawals, inventory levels, supplier replenishment plans, and advance shipment notices. *Id.*;

Ex. 2010 at 187. Early forms of EDI messages were used in the 1960s, and standard formats evolved for years prior to widespread use. Ex. 2005 at ¶ 30; Ex. 2014 at 6-8. The first EDI standards were released in the 1970s, and various industry-specific EDI standards in the US known as ANSI X12 standards were developed in the 1980s. Ex. 2005 at ¶ 30; Ex. 2014 at 7. In the early 1980s, certain car companies and large retailers began mandating that their suppliers use EDI, despite some resistance. Ex. 2005 ¶ 30; Ex. 2015 at 304-07 (noting the low EDI-adoption rates among small- and medium-sized business).

While EDI is generally independent of the communication medium, computer systems and network connectivity were needed to facilitate the generation, communication, and interpretation of EDI-compliant documents. Ex. 2005 ¶ 31. Obtaining and using these systems – particularly before the widespread availability of broadband – involved significant costs, making it difficult for smaller entities to use EDI. *Id.* As Dr. Thomas explains, this scale problem predominantly impacted smaller suppliers who were sometimes forced to purchase expensive equipment or network connections to use EDI. *Id.*; *see also* Ex. 2015 at 304 (showing that by 1998, while 95% of Fortune 1000 firms had implemented EDI, only 2% of the remaining 6 million businesses had done so). In 2000, EDI was a “privilege of large businesses,” because “EDI required prior arrangements and dedicated lines, and it was often found to be costly and complex, especially by small- and medium-sized businesses.” Ex. 2016 at 507-08; Ex. 2005 ¶ 31.

The limitations of EDI systems discussed above were emblematic of the limitations of VMI systems prior to the March 2000. Ex. 2005 ¶ 32. For example,

cost and leverage issues often limited EDI/VMI systems to large companies like Wal-Mart, Proctor & Gamble, and Campbell Soup. *Id.*; Ex. 2010 at 183. Thus, with both EDI and early VMI systems, smaller companies were often unable to take advantage of the benefits provided by these systems. Ex. 2005 ¶ 32.

2. Computerized tracking technology

The electronic inventory management field was also exploring the use of computerized inventory tracking in the March 2000 timeframe. Ex. 2005 ¶ 33. For example, the '538 patent notes that certain large offices were using “automated or semi-automated inventory tracking systems” that utilized computer technology such as “barcode scanners or other electronic identifiers to track outgoing and incoming inventory” Ex. 1001, 1:38-42. However, computerized inventory tracking during this time period lacked full integration with networked third-party VMI computer systems. Ex. 2005 ¶ 33.

1. Previous attempts to coordinate multiple sellers

An early example of coordination between sellers was category captainship, adopted in certain sectors in an attempt to coordinate multiple suppliers of a particular product category. Ex. 2005 ¶ 34. Category captainship involves outsourcing the management of an entire product category to a particular supplier of a product within that category. *Id.*; Ex. 2017 at 79. In a typical category captainship arrangement, a retailer would provide information regarding the category, such as pricing and shelf placement for the relevant brands, to the “category captain.” Ex. 2005 ¶ 34; Ex. 2017 at 80. The category captain would then provide recommendations on matters such as which brands to stock, shelf

location for each brand, displays, space allocation, and pricing, and the retailer would accept, reject, or modify these recommendations as it saw fit. Ex. 2005 ¶ 34; Ex. 2017 at 80.

As Dr. Thomas explains, these category captainship arrangements involved information exchange and advising rather than automated business rules implemented on networked computer systems. Ex. 2005 ¶ 35. Moreover, such arrangements involved the potential for conflicts of interest between the retailer and the category captain, and between competing suppliers, and for concerns based on sharing sensitive information, such as cost data, that could fall into a competitor's hands. *Id.*; Ex. 2017 at 81; Ex. 2011 at 14. A networked computer system that collects and stores such information would need to address the technical problem of providing intelligent and secure data access to shared commercial data. Ex. 2005 ¶ 35.

C. Technical Challenges Facing VMI Systems

While the adoption of VMI computer systems in the 1980s and 1990s ultimately provided numerous benefits, the introduction of these computer systems brought new technological requirements and challenges. Ex. 2005 ¶ 36; Ex. 2009 at 40; Ex. 2010 at 186-87. For example, the risk of exploitation created by sharing sensitive information with supply chain partners was still a frequent concern of companies in 2000. Ex. 2005 ¶ 36; Ex. 2011 at 2, 14; Ex. 2017 at 81; Ex. 2018 at 11. These concerns underline a technical problem facing any VMI system that stores and manages sensitive information from multiple competitors on a single computer system: building and programming a centralized computer system that

utilizes shared information while limiting access to parties' sensitive information in a networked computer environment. Ex. 2005 ¶ 36. This technical challenge is even more important in networked computer systems that store and process sensitive information from multiple direct competitors. *Id.* Storing and processing sensitive information from multiple parties on a networked computer system therefore presented a technological challenge rooted in networked computer systems. *Id.*

Previous attempts to coordinate multiple sellers had not overcome these technical problems. Ex. 2005 ¶ 37. For example, several companies offered third-party transaction processing and other services. *Id.*; Ex. 2011 at 11. One such company facilitated catalogue management, ordering, invoicing, and payment services that allowed a user to, for example, browse and order from an online catalogue. Ex. 2005 ¶ 37; Ex. 2011 at 11. Another company used EDI networks and the Internet to allow customers to request price quotes from multiple vendors. Ex. 2005 ¶ 37; Ex. 2011 at 11. However, such systems still faced technical problems related to providing sensitive information to a third-party computer system because partners were “wary of the possibility of other partners abusing information and reaping all the benefits from information sharing.” Ex. 2005 ¶ 37; Ex. 2011 at 14. In that technological environment, “supply chain partners seldom [shared] information that [related] to sensitive cost data...” Ex. 2011 at 14; Ex. 2005 ¶ 37.

VMI was by its nature a technology-dependent initiative. As noted in one 1999 article on VMI:

Successful implementation of VMI often depends on computer platforms, communications technology, and product identification and tracking systems. In many cases, these systems are already in place at both the retailer and the supplier. Software systems are the most likely areas of deficiency and are important because they facilitate such decisions as replenishment quantity and timing, safety stock levels, transportation routing, and inter-facility transshipments.

Ex. 2010 at 186. In other words, VMI systems as they existed in March 2000 were rooted in newly-developed computer technologies. Ex. 2005 ¶ 38. Implementation of VMI systems required integration of these technologies as well as additional technological developments to address the technical problems created by the use and integration of such technologies. *Id.*

IV. CLAIM CONSTRUCTION

In determining patent eligibility under §101, “a patent claim must be considered as a whole.” *Parker v. Flook*, 437 U.S. 584, 594 (1978). So far only Unisone has addressed this requirement. *Compare* Paper 8 at 6 (no construction) *and* Paper 1 at 19-20 (defining four terms with little regard for the specification) *with* Paper 7 at 28-31 (noting Petitioner’s deviations from the express language of the specification and claims) *and* 13-17 (noting Petitioner’s failure to address any of the claims as a whole). Claim construction is “ordinarily [] desirable—and often necessary—to resolve claim construction disputes prior to a §101 analysis, for the determination of patent eligibility requires a full understanding of the basic character of the claimed subject matter.” *Bancorp Servs., L.L.C. v. Sun Life Assurance Co.*, 687 F.3d 1266, 1273-74 (Fed. Cir. 2012). The failure to address the

claims as a whole has prejudiced Unisone substantively and procedurally. Substantively, Petitioner has reduced the invention to a distorted caricature of what is actually claimed. Procedurally, now Unisone must offer claim constructions in the first instance and risk surprise by subsequent claim constructions, effectively depriving Unisone of the due-process minimums of notice and an opportunity to respond.

A. Petitioner Failed to Provide Meaningful Claim Construction

As an initial matter, the claims should be construed to determine their proper breadth. *Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1369 (Fed. Cir. 2015); accord *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2355 (2014) (focusing on the claims). Without the safeguard of taking claim language seriously, any claim may be caricatured as an abstract idea. *Id.* at 2354-55 (explaining the need for care in applying the test).

1. The petition does not account for the claims as a whole

Petitioner never analyzed any claim as a whole. Paper 7 at 15. Petitioner cherry-picked four terms (customer, inventory management, inventory management system and managing customer inventory), combined the last three terms into a single concept and caricatured the invention as nothing more than those terms. Paper 1 at 19-23. The fallacy of this approach is apparent on its face. For example, regarding “customer,” Petitioner states that only one involved claim (74) requires more than a single customer (Paper 1 at 22), but does not address the “one or more customers” in claim 67 or the “each customer” and “customers”

language in claim 81, much less the “plurality of manufacturers, suppliers, or distributors” that the claims also require and that USPTO has previously found significant. *Cf.* Paper 7 at 13, citing Ex. 1008 at 7. Otherwise, Petitioner relies on bare, undiscussed assertions of its expert that none of the other limitations matter. *E.g.*, Paper 1 at 38; *see Network Commerce, Inc. v. Microsoft Corp.*, 422 F.3d 1353, 1361 (Fed. Cir. 2005) (“[E]xpert testimony at odds with the intrinsic evidence must be disregarded”) (*citing Phillips v. AWH Corp.*, 415 F.3d 1303, 1318 (Fed. Cir. 2005) (en banc)).

“In determining the eligibility...under §101, [a patentee’s] claims must be considered as a whole. It is inappropriate to dissect the claims into old and new elements and then to ignore the presence of the old elements in the analysis.” *Diamond v. Diehr*, 450 U.S. 175, 188 (1981), *cited with approval in Alice Corp.*, 134 S. Ct. at 2355 n.3. It is even less appropriate to reduce a claim to its preamble and pointedly disregard the rest of the claim. Petitioner’s failure to address any claim as a whole is fatal to its invalidity argument and cannot be cured now with new evidence or constructions.

2. The petition does not take the specification into account

In *Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292 (Fed. Cir. 2015), the court reversed claim constructions even under the BRI standard for failure to take the specification into account. *Id.* at 1298-1300. The court noted that it was well-established even under BRI that both the specification and the prosecution history must be taken into account when patent claims return to USPTO for review. *Id.* at 1298.

While the Petitioner purports to consider the specification (Paper 1 at 20), its efforts fail even the most basic rules of claim construction. For example, one of the few terms the petition construes is “Customer,” which the petition defines as “a buyer (person or organization) that uses the claimed inventory management.” *Id.* The specification, however, actually provides a definition: “Customer—Refers to a buyer of products via the present invention. Customers can have ‘open account’ relationships to avoid credit card and COD shipment problems.” Ex. 1001, 5:52-56. This definition is somewhat narrower than Petitioner’s proposed “buyer (person or organization) that uses the claimed inventory management [sic]” because it requires a buyer of *products* that must be bought “via the present invention” rather than a *user* of some “inventory management” strawman. The second half of the definition also contemplates plural customers. Petitioner provides no justification for deviating from this definition in the specification. The lexicography in the specification must be given weight. *Phillips*, 415 F.3d at 1316.

Petitioner’s misapprehension of “Customer” is just a start. The specification is replete with express definitions (many of which are discussed below) that Petitioner simply ignores. *See, e.g.*, Ex. 1001, 2:38-44 & 6:33-54. Petitioner was supposed to address these definitions and their impact on the claims in the petition. It is too late and would be deeply prejudicial to Unisone for new evidence or constructions to arise when Unisone had no notice and will have no opportunity to respond. *Cf. Medtronic, Inc. v. Endotach LLC*, IPR2014-00695, Paper 18 at 9 (PTAB Sept. 25, 2014) (“Petitioner has a burden to make its case, taking into consideration possible contentions that Patent Owner may assert at a later time,

whether it be in relation to claim construction or otherwise.”).

3. “Optimum number or amount” is a red herring

Petitioner defines three claim terms as requiring an “optimum number or amount of each inventory item.” Paper 1 at 20. This concept is a creation of Petitioner’s expert, who cites an online definition as his sole basis. Ex. 1006 ¶ 18, citing Ex. 1009. Petitioner cannot rely on the claims or specification because they do not use this term. An extrinsic definition must not be used to contradict the intrinsic evidence. *Phillips*, 415 F.3d at 1322-23.

The claims do not recite “[a]ctivities employed in maintaining the optimum number or amount of each inventory item” (see Ex. 1009), for the simple reason that Mr. Lucas invented something different. Indeed, as Dr. Thomas explains, those skilled in the art would consider this use of “optimum number or amount” to be unhelpfully ambiguous at best and in any case irrelevant to the claimed invention. Ex. 2005 ¶¶ 50-52. As explained in greater detail below, the claimed invention permits information-sharing between a plurality of actors whose interests not only are *not* aligned, but might actually be competing. Even for a single customer, best customer parameter fulfillment may be more concerned with cost or product availability than with number or amount. Ex. 1001 at 1:55-2:6 (cost, labor, delivery charges), 2:9-19 (security, reliability, product availability); Ex. 2005, ¶¶ 51-52. All of the involved claims require collecting, storing, and/or accessing “inventory and cost information”, which is then used in the evaluation and ordering process. The involved claims also take into account product availability. *See, e.g.*, Ex. 1008, p. 32, cl. 52 (“software tracks inventory items in said databases...as

inventory items are added to, restocked to, or removed from inventories”). Instead of “maintaining the optimum number or amount of each inventory item,” the claims are actually directed to best-fulfilling customer inventory restocking parameters in light of a broader evaluation. Ex. 2005 ¶ 50.

Further illustrating the error in inserting “optimum” into the claims, Petitioner and its expert do not agree on whose perspective should be applied when determining the optimum inventory level. The petition defines “optimum” as referring “to the inventory level desired by the business whose inventory is being managed.” Paper 1 at 22. Dr. Siegel, however, testified during his cross-examination that he applied a “loose use of the word ‘optimum’ [where] [i]t’s basically whatever the inventory manager felt was desirable.” Ex 2005 at 116:11-117:12. Dr. Siegel’s understanding of “optimum,” based on the perspective of the *inventory manager*, is different from the definition proposed in the petition, which applies the perspective of the one whose inventory is *being managed*. This demonstrates a fundamental misunderstanding of the claimed invention, as the two perspectives cannot be one and the same in view of the claims as a whole.

Petitioner’s focus on “the optimum number or amount of each inventory item” is a diversion away from the claimed invention to a vague characterization of an unclaimed and simplistic form of inventory management. As pointed out in the preliminary response, at 30, and now confirmed by Dr. Thomas, Ex. 2005, ¶ 50-52, this distorts the claims into something that appears abstract (e.g., routine optimization of inventory levels) rather than faithfully interpreting the actual language of the claims.

B. Specific Terms to be Construed

As the specification explains, “[t]he present invention implements an Internet-based, vendor managed inventory (‘VMI’) system. A VMI system allows a customer to reduce costs by pushing inventory management responsibilities onto a third party, or manager.” Ex. 1001, 2:38-41. Hence, while the involved claim preambles include the phrases “inventory management” or “managing customer inventory,” the preambles simply provide context for what follows. As Dr. Thomas explains, what follows is not simply inventory management—it is not even simply generic VMI on the Internet—rather, it is a specific set of technical solutions to a particular kind of computer-based VMI. *See, e.g.*, Ex. 2005 ¶¶ 62-79.

1. “inventory restocking parameters provided by said customer”

Variations on the phrase “inventory restocking parameters provided by said customer” appear several times in each of the involved independent claims and once in involved dependent claim 74. The specification explains this feature as follows, at 10:46-52:

When a customer chooses to add a product to an inventory or stocking plan, client software may request restocking and other parameters from a customer, then send appropriate information to a server. A server may add an appropriate entry to a Customer_Inventory or other similar table, thereby enabling inventory tracking through the present invention.

The specification identifies this feature as an improvement over the prior art. Ex. 1001, 9:41:49. A display using exemplary data structures for this feature appears in Table 1. *Id.* at 8:65-9:39. This feature also enables further advantages, such as predictive restocking. *See, e.g., id.* at 12:30-34, claims 68-72. Although

Petitioner relies on the reexamination record as proof that this feature is not technical, this reliance misapprehends both the law and the reexamination Examiner's finding. Paper 1 at 11, citing Ex. 1008, 6-7. The Examiner expressly states that the claims include a database structured to include parameters not found in the prior art. Ex. 1008, 6-7. Like the Examiner, a POSA would have understood that these parameters are part of a novel claim-defined data structure in a claimed database. Ex. 2005 ¶ 42. These data structures are sufficient in themselves to make the invention more than merely abstract because they improve on the ease-of-use and efficiency of the resulting computer-based VMI systems. *In re Lowry*, 32 F.3d 1579, 1583-84 (Fed. Cir. 1994).

Equally significantly, this phrase shows that the customer is not the entity with responsibility for managing the claimed system as a whole. Ex. 2005 ¶ 43. As defined earlier in the specification, "the present invention...allows a customer to reduce costs by pushing inventory management responsibilities onto a third party, or manager." Ex. 1001, 2:38-41. The customer is not managing the inventory, but instead pushing that responsibility to a third party. Ex. 2005 ¶ 43. The comma in the quote above indicates that "manager" is a synonym for the third party that is managing the system, not a circular reference to the customer itself. *Id.* As noted previously, the claims also contemplate a plurality of manufactures, suppliers or distributors, which present security issues on a network, which each of the involved claims also addresses (requiring permissions or roles based on participant classification).

2. “said software tracks inventory items ... for (1) said customer and (2) said manufacturer, supplier, or distributor”

Each of the three involved independent claims has a variation of tracking inventory items for the customer and the manufacturer, supplier or distributor. The specification states that “the present invention allows inventory tracking and management through a combination of manual, semi-automated, and automated means.” Ex. 1001, 32:25-28. For example, the software provides an interface for suppliers that are not equipped for automatic tracking (*id.* at 5:66-6:2), but also supports automatic and semi-automatic systems, such as barcode scanners and vending machines (*id.* at 3:3-23). The claimed databases are structured to keep track of when items are added, restocked and removed from both customer inventories and manufacturer, supplier or distributor inventories.

As the specification notes, systems for automatically or semi-automatically tracking inventory using barcode scanners or other electronic identification technologies were already being adopted by large enterprises for their own inventory. The claimed invention improved on this technology by adapting it for a networked VMI-like implementation, which allows for the participation of multiple entities, lowering the cost of participation and increasing other efficiencies. *Id.* at 1:38-57. The claimed tracking offers tangible advantages in the real world over then-existing technologies. *Id.* at 2:45-53. The specification notes that tracking is affected by network connectivity, such that an off-line alternative would be required when the network is not connected. *Id.* at 7:39-51. It further notes that tracking may be combined with other security features. *Id.* at 8:19-54.

The specification distinguishes between “linked suppliers” that use the computerized tracking systems of the present invention and “manual suppliers” that do not. *Id.* at 5:56-6:4; *see also id.* at 3:3-5 (“Customer Inventory Systems 130 may allow manual inventory semi-automated inventory tracking, or inventory may be dispensed using automated systems.”). However, even embodiments using manual tracking techniques require a connection to the third-party computer system to communicate the tracking information. Ex. 2005 ¶¶ 44-45. While tracking must initially take place at the inventory site, the tracking functionality in the challenged claims is performed by the recited software.

In sum, tracking is an integral part of the solution to providing a networked, multi-participant system and uses tangible means to follow tangible products and thus provide tangible benefits. Tracking cannot happen in the abstract. A person of ordinary skill in the art (“POSA”) would have understood that the recited tracking systems and techniques refer to the computerized tracking by a third-party computer system. Ex. 2005 ¶¶ 44-46.

3. “said software provides an interface through which said customer, manufacturer, supplier, or distributor can access the information ... according to said assigned permissions or roles”

All of the involved independent claims require access-limiting permissions or roles. These rules provide security between users in a multi-user system. For example, the system implements rules such that “[n]o customer can view, inquiry into, update or in any way alter another customer[']s data” and “[n]o Linked Supplier can see data belonging to another linked supplier.” Ex. 1001, 6:39-49; *see*

also id. at 5:57-65 (defining Linked Supplier as a supplier with “live Internet linkages into their databases for queries, order processing, and billing”). These roles and permissions enable users with competing interests to use a common electronic inventory management system without compromising security. A POSA would therefore have understood that the recited “permissions or roles” assigned to the groups define whether a member of a particular group can access particular data stored in the recited one or more databases. Ex. 2005 ¶ 49.

4. “detecting” (claim 81)

Claim 81 requires that the tracking step be executed by “detecting each inventory item” and updating databases. The specification gives various examples of detecting hardware, including vending machines, radio-frequency identification (RFID) and barcodes. Ex. 1001, 3:3-4:5. For example, the specification says that “RFID portals can detect or scan RFID tags as such tags pass through a portal.” *Id.* at 3:36-39. Such detection can be integrated with security technologies such as biometric or other identifiers. *Id.* at 8:31-54. In addition, as noted above, the specification explicitly distinguishes between “linked suppliers” that use “the present invention’s inventory tracking and accounting software” and “manual suppliers” that do not. *See id.* at 5:57-65 (defining “Linked Supplier” as suppliers who “have live Internet linkages into their databases for queries, order processing, and billing”).

The claimed computer-based detecting requires a network connection between the computer of claim 81 (i.e. the third-party computer inventory management computer system) and a computer associated with the inventory site.

A POSA would have understood that the computer of claim 81 is interacting with the “linked suppliers” with “live Internet linkages into their databases for queries.” *Id.* at 5:57-65; Ex. 2005 ¶¶ 47-48. A POSA would further have understood that the recited detection techniques, followed by the updating of the database, refer to the automated detection of “linked supplier” inventories through use of hardware such as the vending machines, RFID portals and tags, or barcodes disclosed in the specification. *Id.* The claimed invention improves on existing technologies by making it available in a networked, multi-user system in a secure and effective manner. The recited “detecting” cannot occur in the abstract since it uses tangible means to follow tangible products in order to provide tangible results. *Id.*

V. LIFE TECHNOLOGY LACKS STANDING

The ground of challenge should be dismissed because the ‘538 patent is not a “covered business method patent.” *See* AIA §18 and 37 C.F.R. §42.301. To qualify for CBM review, a petitioner bears the burden of demonstrating that the challenged claims (1) are not a technological invention and (2) are directed to a financial product or service. 37 C.F.R. §42.304(a); 77 Fed. Reg. 48709 (Aug. 14, 2012). The petition does not meet these burdens. The issue of whether the ‘538 patent is eligible for CBM review is one that survives beyond the institution decision and may be preserved for appeal. *See Versata Dev. Grp. V. SAP Am., Inc.*, 793 F.3d 1306, 1314-323 (Fed. Cir. 2015) (concluding that “we may review whether Versata’s patent is a CBM patent” and “we have the authority to review whether the [challenged] patent is within the PTAB’s §18 authority”).

A. The ‘538 Patent Is Directed to a Technological Invention

The AIA expressly excludes “patents for technological inventions” from CBM review. *See* AIA §18(d)(1). To determine whether a patent is directed to a technological invention, the Board considers whether “the claimed subject matter as a whole” (1) “recites a technological feature that is novel and unobvious over the prior art” and (2) “solves a technical problem using a technical solution.” 37 C.F.R. §42.301(b). Both of these considerations demonstrate that the ‘538 patent is directed to a technological invention.

1. The claimed subject matter as a whole recites technological features that are novel and unobvious over the prior art

As an initial matter, and as discussed in Patent Owner’s preliminary response, the petition fails to assess—let alone demonstrate—whether the challenged claims recite a novel and unobvious technological feature. *See* Paper 7 pp. 9-17. Petitioner’s argument is incomplete, provides zero relevant claim analysis, and is factually flawed because Petitioner incorrectly characterizes the Examiner’s opinions expressed during the reexamination and ignores numerous technological features – including features that the Examiner highlighted during reexamination. The petition contains no prior art analysis that even purports to demonstrate that the recited systems and methods would have been obvious. While the involved patent begins with existing computers and software, the patent goes on to modify them to provide additional features. The petition never demonstrates that the hardware and software mentioned in the petition provide the claimed features right out of the box, that is, without the innovative additions that the patent

teaches and that Examiners twice held distinguished the claimed invention from the prior art.

Moreover, Dr. Thomas explains that each of the challenged independent claims recites computerized dynamic inventory ordering based on the customer's inventory restocking parameters and inventory and cost information collected from a plurality of sellers. Ex. 2005 ¶¶ 54-58. For example, claim 52 requires that one or more databases store "customer inventory information, the customer inventory information including a number of items at a customer" and "inventory and cost information for a plurality of manufacturers, suppliers, or distributors, the inventory information for the plurality of manufacturers, suppliers, or distributors including: a product identifier and a number of items in manufacturer, supplier or distributor inventory." Software then "evaluates said customer inventory information and inventory or cost information for a plurality of manufacturers, suppliers, or distributors in light of said restocking parameters." Based on this evaluation, the software then "automatically orders manufacturer, supplier, or distributor inventory which best fulfills said inventory restocking parameters provided by said customer." Independent claims 67 and 81 recite similar limitations. Dr. Thomas testifies that one of ordinary skill in the art at the time of the invention would have understood that this inventory ordering process uses networked computer hardware and custom software to perform dynamic processing of the recited information to produce real world results. *Id.* ¶ 54. Such a process is plainly technical. *Id.* Furthermore, the recited technical features, viewed as a whole, were neither conventional nor obvious in March 2000. *Id.* The petition

contains no allegation to the contrary.

The challenged claims also define a database access system for providing permission- or role-based access to information provided by one or more customers and a plurality of sellers. *Id.* at ¶ 55. For example, claim 52 defines software that “identifies users and allows users to be classified into groups, and wherein permissions or roles are assigned to such groups.” The system then provides an interface through which a customer or seller “can access the information in said one or more databases according to said assigned permissions or roles.” Independent claims 67 and 81 include similar limitations. As with the dynamic inventory ordering software discussed above, this software interface providing permission- or role-based database access is a facially technical feature. *Id.* Again, the petition contains no prior art analysis even purporting to demonstrate that this technical feature is not novel or nonobvious.

Furthermore, as explained by Dr. Thomas, the Petition is incorrect when it states that the patent does not describe, and that the claims do not require, any specialized software. *See* Ex. 2005 ¶¶ 56-58; Paper 1 at 1-2, 35, 50-51. While the specification notes that certain embodiments of the claimed invention build upon and utilize commercially-available hardware and software, this certainly does not mean that the invention is limited to such hardware and software. Ex. 2005 ¶ 56. Dr. Thomas explains that the very nature of computer technology requires that virtually all new computer systems utilize some preexisting computer hardware and/or software. *Id.* While general-purpose computers are not new, nor are the database software platforms mentioned in the specification, *see* Ex. 1001 at 5:15-

25, such platforms are designed to operate in conjunction with custom-software that causes the system as a whole to operate as a new, specially-programmed machine. Ex. 2005 ¶ 56.

For example, the specification mentions an embodiment where an Application Server 240 uses business rules to interpret information stored in the database, monitor inventory levels reflected in the database, contact vendors based on this information, adjust inventory information as new items are received, and provide additional services to facilitate equipment resale. *See id.* at 5:26-37. The specification also notes that such rules can be used to control access to information. *See, e.g., id.* at 6:39-58, 8:19-62. Dr. Thomas explains that, in this context, a business rule is just another word for specialized programming. Ex. 2005 ¶ 57. In other words, these business rules *are* custom software that instructs the computer system as a whole how to operate based on various inputs. *Id.*

The specification also describes an embodiment in which the Application Server 240 is “implemented within Database Server 230 as a set of business rules.” Ex. 1001 at 5:39-42. Dr. Thomas explains that while this database platform itself may be commercially-available, the “set of business rules” in such an embodiment would still be custom software that would alter the operation of the database. Ex. 2005 ¶ 56. Just as a new program executing within a conventional operating system is not part of that operating system, the Application Server in this embodiment is not a conventional database server simply because it is implemented *within* the database server. *Id.*

2. The claimed subject matter as a whole solves a technical problem using a technical solution

As is also discussed in Patent Owner's preliminary response, the petition additionally fails to sufficiently assess whether the challenged claims "solves a technical problem using a technical solution." Paper 7 pp. 17-20. This is the so-called Prong 2 of Rule §42.301(b). Beyond the failure of the petition to meet its burden of analyzing this issue, Dr. Thomas explains that the challenged claims do, in fact, present a technical solution to a technical problem. Ex. 2005 ¶¶ 59-61.

As discussed above (see section III), inventory management computer systems were in use prior to March 2000. For example, some large businesses used networked computer systems to facilitate the transmission and receipt of EDI messages. *Id.* at ¶ 59. VMI systems had also been developed and adopted by certain businesses in the 1980s and 1990s. *Id.* However, as of March 2000, the existing inventory management computer systems had various technical problems that limited their functionality and adoption. *Id.* For example, EDI systems and other VMI computer systems traditionally facilitated inventory management between a customer and a single seller. *Id.* Thus, for a customer to manage its inventory with multiple suppliers, it would require multiple platforms, or at least multiple instances of a platform running concurrently. *Id.* These isolated systems lacked the ability to make automated, coordinated inventory decisions for multiple sellers. *Id.*

As Dr. Thomas explains, the invention recited in the challenged claims solves this technical problem by providing a unified third-party networked computer system that collects, stores, and processes inventory and cost information

from multiple sellers and from one or more customers. Ex. 2005 ¶ 60. The integration of customer inventory information as well as inventory and cost information from multiple sellers provides increased visibility across entities that allows for more intelligent, coordinated decision-making. *Id.* In conjunction with inventory restocking parameters provided by the customer, the claimed invention provides dynamic, coordinated, software-based decision-making that overcomes the technical limitations of previous isolated EDI and VMI computer systems. *Id.* These technical advancements also allowed small- and medium-sized businesses to take advantage of electronic inventory management, removing barriers to entry by providing an Internet-based third-party computer system that offered unified, secure, and automated inventory control to smaller customers in a multi-seller environment. *Id.* The claimed invention also improved on existing inventory tracking technologies by integrating them into a networked, multi-user computer system in a secure and efficient manner. *Id.*

Dr. Thomas further explains that the claimed invention also provided a technical solution to a technical problem related to data security in a networked computer environment. *Id.* at ¶ 61. Traditional VMI computer systems lacked sufficient data security to enable the collection, storing, and processing of sensitive inventory and cost information from multiple sellers. *Id.* Prior to ‘538 patent, the exposure of sensitive information via networked computer systems was a technical problem that limited the adoption of multi-user inventory management computer systems. *Id.*; *see also, e.g.*, Ex. 2011 at 14 (describing “several hurdles” including “partners abusing . . . information sharing” and stating that “supply chain partners

seldom share information that relates to sensitive cost data”). Dr. Thomas testifies that the challenged claims solved this technical problem by applying role- or permission-based database access to its unified collection of sensitive information from multiple sellers on networked computers, which enabled coordinated inventory decision-making by a third-party computer system without risking exposure of sensitive information. Ex. 2005 ¶ 61. The challenged claims thus provided a technical solution to this technical problem, thereby enabling multiple users to collaborate with confidence via a third-party managed system that facilitated access and information interchange according to authorized roles. *Id.*

B. The Claims Are Not Directed to a Financial Product or Service

The petition also fails to meet its burden of showing that the claims are directed to a financial service or product.

First, as explained in the preliminary response and repeated here, Petitioner’s arguments rely on a misstatement of PTAB rules. Paper 7 p. 21. Petitioner quotes Ex. 1004 when arguing that “the USPTO instructs that the language ‘practice, administration, or management’ is ‘intended to cover any ancillary activities related a financial product or service, including . . . marketing, customer interfaces [and] management of data[.]’” Paper 1 at 7. However, Ex. 1004 is not a statement by the USPTO but rather an article by an individual who worked for a U.S. Senator. *See* Ex. 1004 at 1. Moreover, it is not clear that “ancillary activities” form the proper touchstone of the analysis. Additionally, the 705 classification cited in the petition is not dispositive. Paper 1 at 7. For example,

the PTAB has denied CBM institution based on lack of standing despite classification in Class 705, stating that “we are not persuaded in this case that mere classification in Class 705 supports a conclusion that” the challenged patent is a financial product or service under AIA §18(d)(1)). *Salesforce.com, Inc. v. Applications in Internet Time LLC*, CBM2014-00168, Paper 10, pp. 9-10 (PTAB Feb. 2, 2015). These misapprehensions of PTAB rules undercut Petitioner’s subsequent arguments.

Furthermore, Petitioner’s reliance on the ‘538 patent specification is similarly misplaced. For example, cites to price and tax data mentioned in the specification and the specification’s discussion of computer technology that can be used to broker inventory resale do not support finding the ‘538 patent eligible for CBM review. *See* Paper 1 at 8-9. As explained above, simply storing price data is insufficient since the claims address computer technology providing a unified third-party networked computer system that collects, stores, and processes inventory and cost information from multiple sellers and from one or more customers. *Cf. Sega of Am., Inc. v. Uniloc USA, Inc.*, CBM201-00183, Paper 11, pp. 10-13 (PTAB Mar. 10, 2015) (analyzing “payment data” claim limitation when denying CBM eligibility). Furthermore, aspects of the specification that are not recited in the challenged claims are insufficient to support standing, since it is the claims and not the specification that must be directed to a covered business method. *See* AIA §18(d)(1); *see also Salesforce.com*, CBM2014-00168, Paper 10 at 8-9 (“Petitioner fails to show any relationship between the two references to ‘finance’ in the written description and the systems and methods recited in the

claims. . . .”).

That certain of the challenged claims recite collecting cost information and ordering inventory is not sufficient to demonstrate that they are directed to a financial activity, as no financial transactions are recited in the challenged claims. While payment may occur elsewhere as a result of the recited inventory orders, the patent itself distinguishes between the act of ordering inventory, which is claimed, and payment for inventory, which is not. For example, the specification notes that the system “may further integrate with an automated payment system” Ex. 1001, 11:47-51. Again, such a payment system is not recited in the claims, which are the focus of this analysis. The challenged claims deal with inventory tracking and ordering, not payment, and thus do not recite a covered business method as defined by the AIA. While the Board’s institution decision states that payment is not a requirement of AIA §18(D)(1) (Paper 8), this reasoning appears inconsistent with another decision issued the same day as the institution decision in this case. *See FedEx Corp. v. Ronald. A. Katz Tech. Licensing, L.P.*, CBM2015-00053, Paper 9 at 11 (denying institution based on lack of CBM eligibility, and stating “Petitioner does not offer any persuasive evidence showing that inventory control necessarily involves ‘movements of money.’”) (citing 17 Cong. Rec. S5432 (statement of Sen. Schumer)).

VI. THE CHALLENGED CLAIMS RECITE PATENT ELIGIBLE SUBJECT MATTER

Petitioner fails to meet its burden of demonstrating that the challenged claims are directed to ineligible subject matter. First, the record is devoid of

admissible evidence sufficient to support Petitioner’s contention that the challenged claims are directed to an abstract idea. The argument that the claims are directed to the abstract concept of inventory management is itself misguided. In characterizing the claims as just “inventory management,” Petitioner ignores the language of the claims themselves, which demonstrates that they are directed to specific improvements to known technology for enabling vendor managed inventory at the time of the invention.

A. The Evidence Submitted by Petitioner Does Not Support a Finding that the Claims are Directed to an Abstract Idea

Petitioner’s contention that the challenged claims are directed to an abstract idea is conclusory and lacks admissible support in the record. Not only is the petition itself deficient in this respect, but the underlying evidence relied upon is insufficient, irrelevant, and inadmissible. Petitioner’s expert confirmed during cross-examination that he is completely unqualified to opine as to the asserted historical nature of inventory management and whether it qualifies as a fundamental economic practice. Similarly, the underlying exhibits on which Dr. Siegel bases his testimony are unreliable and do not support Petitioner’s abstract idea argument.

1. Dr. Siegel’s testimony is not admissible or relevant

The entire argument set forth in the petition regarding the first prong of the *Mayo/Alice* test is that the challenged claims are directed to the “fundamental business and economic practice of inventory management” as set forth in the “Background of Inventory Management” section of the petition. *See* Paper 1 p. 26

(citing *id.* at §VI(B)). The Background of Inventory Management section, in turn relies on testimony from Dr. Siegel regarding “the long history of inventory management.” *Id.* at 14 (citing Ex. 1006 ¶¶ 16-28). Only paragraphs 16-25 and 28 of Dr. Siegel’s declaration are substantively cited and relied upon in the “Background of Inventory Management” section of the petition. *See* Paper 1 pp. 14-19. Paragraphs 39-40, 42, 77 and 88 of Dr. Siegel’s declaration, also cited by the petition at page 26, are conclusory and merely refer back to his discussion of the purported history of inventory management practices. As explained in Patent Owner’s preliminary response, Dr. Siegel is an Information Technology specialist with no qualifications indicated in his declaration that would render him an expert on the subject of inventory management as a purportedly abstract historical practice. Paper 7 pp. 23-24.

Dr. Siegel admits he is unqualified to testify on this topic. During his cross-examination, Dr. Siegel confirmed that he has no degrees in inventory management or similar fields such as supply chain control or logistics. Ex. 2005 at 16:14-21. Indeed, Dr. Siegel has no degree in a more general field that might be relevant to his inventory management history lesson, such as economics, history, or business. *Id.* at 16:4-13.

When asked directly whether he is an expert in the history of inventory management, Dr. Siegel admitted that he is not:

Q: Are you an expert in the history of inventory management?

A. I have not studied, for a profession, the history of inventory management.

Q. Is that a no?

A. That would be a no.

Id. at 41:22-42:3.

Dr. Siegel went on to claim that he is an expert in “a history of the application of information systems in inventory management,” while at the same time conceding that he has “not looked at the ancient history of inventory management except for the most part, in this document” (i.e., his declaration) and even to the extent he may have looked at the issue during his career, he is “not an archeologist or historian who has looked at these types of facts as a profession.” *Id.* at 42:4-43:4.

In its abstract-idea argument, Petitioner relies on Dr. Siegel as an inventory-management history expert, not as an information systems expert. Dr. Siegel provides no information-systems testimony for the first prong of the *Alice* test, regarding the history of inventory management as a purported fundamental economic practice. Yet Dr. Siegel admits he has no expertise in information-management history and only attempted to educate himself in order to prepare his declaration.

To cover his admitted deficiency as an expert, Dr. Siegel defines a POSA as someone that has “a basic understanding of inventory management principles or the ability to achieve such understanding (e.g., read a book).” Ex. 1006 ¶ 15. In other words, Dr. Siegel testifies that a person of ordinary skill in the art relevant to the ‘538 patent would not need even a basic understanding of inventory management principles, just an ability to gain such an understanding. Significantly,

Dr. Siegel's definition does not even require that a book actually be read: mere literacy suffices. Dr. Siegel provides no basis for this definition, such as evidence of patents or literature in the relevant field at the relevant time. The sophistication of the literature in the art at the relevant time, some of which accompanies the testimony of Dr. Thomas, belies Dr. Siegel's assertion.

When questioned about his definition during cross-examination, Dr. Siegel backed away from it, stating that a person of ordinary skill in the art would actually "need much more than what the average person understands about inventory management" and that "you would need to understand inventory management principles . . . at a reasonable level, something beyond – well at a level of reading a book about it." Ex. 2007 at 176:13-21.

Petitioner's reliance on Dr. Siegel's testimony is misplaced regardless of which definition is applied. Either a person of ordinary skill has no experience or skill in the relevant area at all—a facially absurd proposition highlighting Dr. Siegel's lack of qualifications to testify regarding inventory management as a fundamental economic practice—or a person of ordinary skill in the art has more than average knowledge relevant to inventory management, yet Dr. Siegel chose instead to use ancient or unsourced materials to learn about the historical practices upon which Petitioner relies for the first prong of the *Mayo/Alice* test rather than contemporary evidence of what those in the art actually knew and could do. He did not even "read a book" on it.

Not only is Dr. Siegel unqualified to opine on inventory management as a purported longstanding and fundamental economic practice but, as he admitted

during cross-examination, much of the discussion in his declaration and the petition's "Background of Inventory Management" section does not even provide examples of inventory management as he defines it. Dr. Siegel and Petitioner define "inventory management" as "activities employed in maintaining the optimum number or amount of each inventory item." Paper 1 p. 20; Ex. 1006 ¶¶ 33-34. Dr. Siegel further testifies that "the term 'optimum' refers to the inventory level desired by the business whose inventory is being managed." Ex. 1006 ¶ 34. The historical examples Dr. Siegel provides do not match his definition.

For example, Dr. Siegel admitted on cross-examination that the historical examples presented in paragraphs 18, 19, and 20 of his declaration at most describe "tallying" inventory (i.e., counting it). *See, e.g.*, Ex. 2007 at 123:7-125:17 (testifying that the examples in paragraphs 18-20 "refer more to the counting part of the activity" and that "the only activity specifically talked about is the tallying of amounts of these goods"). Dr. Siegel then admitted that these activities do not constitute inventory management. *Id.* at 131:22-132:2 (Q: Do you need to do something more than tallying inventory to constitute inventory management under your definition? A: I would think you would need to do more than just tally.').

Similarly, the other examples Dr. Siegel provides do not show the historical practice of inventory management even by his own definition. Armies requisitioning supplies from lands they pass through (Ex. 1006 ¶ 22), businesses maintaining a tally of inventory on hand (*id.* at ¶ 23), a shipbuilder improving production by storing manufacturing components close at hand (*id.* at ¶ 24), and an unbuilt automatic checkout system (*id.* at ¶ 25) do not provide examples of

inventory management activities as defined by Petitioner and Dr. Siegel, let alone have any connection to the language of the challenged claims.

Dr. Siegel acknowledged the shortcomings in his declaration when addressing the “tallying” examples, stating that “[o]ne could *imagine* that you . . . manage inventory according to these writings.” Ex. 2007 at 118:23-120:22 (testifying that he “would *imagine* that someone would [manage inventory] using these writings” but that he “would go to the broader document [i.e., the cited exhibit] to get more information about exactly what they were doing with that”). Dr. Siegel testified that he would have to rely on his imagination to fill in the gaps between his examples and his definition of inventory management because his declaration does not make that connection. *Id.*

2. The underlying documents Dr. Siegel relies on are unreliable and inadmissible

Beyond Dr. Siegel’s lack of qualifications and failure to support his contention that inventory management as defined in the petition is a fundamental economic practice, the underlying documents cited in his declaration and the petition with respect to the abstract idea prong are unreliable and inadmissible.

As Unisone explained in its preliminary response, Dr. Siegel does not discuss the source of these articles. Many of the exhibits were obtained from a website for a company called Almyta Systems and were written by someone named Anton Dolinsky. *See, e.g.*, Ex. 1011 at 1; *see also* Ex. 1013, 1014, 1017, 1018. While Petitioner has the burden to establish the reliability of the bases for its expert’s testimony, Unisone notes that Almyta Systems (www.almyta.com)

appears to be a software company located in Nevada. Ex. 2002. The articles Dr. Siegel cites are promotional materials for one of the company's products, not academic articles providing a reliable historical account, much less learned treatises or periodicals. Similarly, the author Anton Dolinsky appears to be a tutor with a bachelor's degree in rhetoric. Ex. 2003; Ex. 2004. The basis for Dr. Siegel's opinions regarding the nature and history of inventory management is certainly not his own expertise or peer-reviewed academic works; instead, it appears to be someone who "occasionally write[s] prose pieces and poems for fun." Ex. 2004. Petitioner has not provided a credible (or even facially admissible) basis for invalidating the claims of the '538 patent.

Dr. Siegel testified that he attempted to educate himself regarding inventory management as a historical practice while preparing his declaration, but he was unable to state whether the documents he chose to rely on were in any way credible. For example, Dr. Siegel testified that he was unfamiliar with the sources of his cited material, explaining that he had not heard of Almyta Systems before this case. Ex. 2007 at 59:14-16 (Q. Had you ever heard of Almyta Systems before your work in this case? A. I don't believe so."). Similarly, even though he describes Gunter Dreyer as "a prominent archaeologist" in his declaration (Ex. 1006 ¶ 19, citing Ex. 1011, 1012), Dr. Siegel was unable to say whether he had ever heard of Dr. Dreyer before this case. Ex. 2007 at 43:10-44:13 (testifying that "I don't recall reading anything about his work" but "[i]t is possible that I have read something in the past about Dr. Dreyer").

With regard to Anton Dolinsky, the author of most of the articles cited by Dr.

Siegel in his declaration, Dr. Siegel admitted during his cross-examination that he has no idea whether Anton Dolinsky has any qualifications rendering him knowledgeable in this field. For example, Dr. Siegel was unable to say whether the Anton Dolinsky described in Exhibits 2003 and 2004 is a different person than the Anton Dolinsky that wrote the articles Dr. Siegel relied on. *Id.* at 47:14-48; 65:9-24. Moreover, when asked whether Exhibits 2003 and 2004 indicate that Anton Dolinsky has any experience with or knowledge of inventory management, Dr. Siegel was unable to point to anything other than Mr. Dolinsky's employment for just over a year as a sales coordinator for a fruit and vegetable distributor, handling phone sales. *Id.* at 52:15-53:6; *see also* Ex. 2003 p. 1. Dr. Siegel was also unable to say whether Anton Dolinsky can be credibly relied upon for forming the basis of the opinions in Dr. Siegel's declaration:

Q: If we assume that the Anton Dolinsky referred to in Exhibits 2003 and 2004 is the Anton Dolinsky that authored the article in Exhibit 1011, is Anton Dolinsky the type of author you can credibly rely on for forming the basis of your opinion?

[objection omitted]

A: I'm not – I can't assess this with this much information, and it's not something I'm going to do, you know, with this amount of information.

Ex. 2007 at 65:25-66:11. Dr. Siegel was unable to say whether *he* would rely on Exhibits 1011, 1013, 1014, 1017, and 1018 after reviewing Exhibits 2003 and 2004, yet Petitioner would have the Board rely on these exhibits or on testimony based on them. Indeed, when Dr. Siegel was asked if he would permit a student to

cite the Almyta Systems articles in a Ph.D. dissertation, the only example he could provide was a hypothetical thesis covering the range of “what people are writing out there on, you know, inventory management systems.” Ex. 2007 at 71:19-73:3. That is, Dr. Siegel’s sole example of where these exhibits might be acceptable in academia would be a survey capturing anything that anyone is saying about inventory management, in which case “[y]ou would include sources of all range of knowledge.” *Id.* Dr. Siegel refused to state whether he, as a Ph.D. advisor, would view the Almyta Systems articles as an acceptable cited reference. *Id.*

Dr. Siegel admitted that “in general” he does not typically rely on the content of company web pages as the basis for his expert opinions, and that in this case he “found the need to cross-reference” the Almyta Systems exhibits with “other sources, both in the library and on the web.” *Id.* at 60:15-61:8; 85:5-85:25; *see also id.* at 88:3-6 (“I’m saying that I chose to accept [the Almyta Systems articles] by looking at cross-references. That’s the way I chose to accept them.”). Yet Dr. Siegel admitted that he did not include those alleged “cross-reference” materials as exhibits and he was unable to identify a single one during cross-examination:

Q. So you’re unable to specifically point to anything else that confirms the content of the Almyta systems exhibits, correct?

A. I said I used my personal knowledge that I had from whatever I knew, plus my looking at – I physically went to the library and, you know, pulled a number of books from the shelf and looked at them. Plus, I spent a fair amount of time online looking at various documents.

Q. And those other books that you refer to, you did not cite, correct?

A. I did not cite them as exhibits.

Q. And you can't identify them, correct?

A. I'd probably have to go back to the library to the you know, search engine there and go through it, yes.

Q. So sitting here today, you're unable to identify those books, correct?

A. Sitting here today, I don't remember the titles and authors of those books.

Id. at 79:20-80:19. As discussed above, Dr. Siegel admitted he is not an expert in the history of inventory management so his personal knowledge cannot be relied upon as the basis of his testimony on this issue. Dr. Siegel's inability to name a single document he claims to have reviewed to cross-reference the few exhibits cited in his declaration prejudices Unisone's ability to verify his testimony and leaves both his testimony and the cited exhibits without the support that even he felt was needed. *Id.*

While Unisone will file a motion to exclude at the appropriate time, showing that both Dr. Siegel's testimony and most of its basis is inadmissible, on the merits this evidence is not entitled to any weight in determining abstractness. The Board should not credit testimony that is facially inconsistent and baseless even by the expert's own standards (at least for contexts other than Board proceedings). The Petitioner made a litigation choice to proceed with this evidence, a choice that has tied up considerable resources for both the Board and Unisone, a choice that should not be rewarded. The Board, of course, cannot properly substitute its own expertise for evidence lacking in the record in an *inter partes* proceeding. *Brand v. Miller*, 487 F.3d 862, 868-69 (Fed. Cir. 2007).

3. Petitioner cannot show the claims are directed to an abstract idea without supporting evidence

Petitioner relies entirely on Dr. Siegel's unqualified and inadmissible testimony as the sole support for the contention that the challenged claims are directed to an abstract idea, the first prong of the *Mayo/Alice* test. The underlying exhibits Dr. Siegel cites (Exhibits 1009-1018) cannot salvage the evidentiary failings of his declaration because they themselves are unreliable and irrelevant. Petitioner is left with *no evidence* that is credible or relevant to support of its abstract idea contention. *See* Paper 1 p. 26 and §VI(B).

Setting aside the unreliable and inadmissible expert testimony and underlying documents, Petitioner has nothing more than attorney argument to support the contention that the claims are directed to the abstract idea of inventory management. This does not satisfy Petitioner's evidentiary burden. *See, e.g., Ex parte Bagley*, Appeal 2011-001822, 2013 WL 3804935 at *1-2 (PTAB May 31, 2013) ("without a finding, supported by substantial evidence, that the claimed invention is directed toward an abstract idea, the Examiner cannot properly assert that the claimed invention does not meet the requirements of 35 U.S.C. §101"); *see also Brand*, 487 F.3d at 868-69 (Board expertise no substitute for record evidence).

Although the Board did not have the benefit of Dr. Siegel's cross-examination to confirm just how deficient Petitioner's evidence is, it is telling that the institution decision determines that the claims are likely directed to "the basic concept of inventory management, i.e., a 'fundamental economic practice,'" citing to the *Alice* and *Bilski* decisions rather than the petition for any support that (1) inventory management as defined in the Petitioner is actually a fundamental

economic practice and (2) the challenged claims are actually directed to that “basic concept.” Paper 8 at 15. When the institution decision does cite to Petitioner’s evidence and analysis, it is to discussion in the petition relating to the second prong of the *Mayo/Alice* test, not the first. *See id.* at 16 (citing Paper 1 at 30-37). Even at institution, the Board could not find credible support in Petitioner’s evidence and analysis for the first prong because there was none. The record is devoid of credible evidence of invalidity.

B. The Claims Are Not Directed to an Abstract Idea

The Supreme Court has set forth a two-part framework for determining whether claims are directed to patent-eligible subject matter. *See Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1294 (2012); *see also Alice Corp. Pty. Ltd. v. CLS Bank Int’l.*, 134 S. Ct. 2347, 2355 (2014). In the first step, the PTAB must consider whether the claims are directed to a patent-ineligible law of nature, natural phenomenon, or abstract idea. *Mayo*, 132 S. Ct. at 1296-97. Only if this test is satisfied does the analysis proceed to the second step in which the PTAB must “analyze 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.” *Alice*, 134 S. Ct. at 2355 (quoting *Mayo*, 132 S. Ct. at 1298, 1297). Here, the first step is not satisfied, rendering it unnecessary to even analyze the second.

As Dr. Thomas explains, the challenged claims are directed to a specific implementation of a particular type of VMI that uses specially programmed computers in a networked environment to perform tangible operations in a novel

way to produce tangible results. Ex. 2005 ¶ 65. The computer systems and computerized methods recited in the challenged claims are not directed to the general idea of inventory management as alleged in the petition. *Id.* Far from being the ancient concept of inventory management performed on a computer, the claims recite a tangible computer implementation of a specific type of VMI that provides a networked, third-party-managed VMI computer system to collect, store, and process information from a customer and multiple sellers to trigger inventory orders dynamically, track and update inventory levels, and provide granular database access based on roles or permissions assigned to users. *Id.*

The non-abstract nature of the invention is apparent on the face of the challenged claims. First, the claim limitations are rooted in recently developed (as of March 2000) computer technology, including specially configured databases, networked computers, computerized inventory tracking technology, and custom computer software. *Id.* ¶ 66. Moreover, rather than simply reciting standard inventory management techniques performed by these technologies, the design and operation of the recited technologies provides a novel technical approach overcoming existing technical problems. *See infra*, section VI(C).

The computer tracking limitations as recited in the challenged claims and as discussed in the specification cannot occur in the abstract. *See supra*, section IV(B)(2). Dr. Thomas explains that a POSA would have understood that tracking is an integral part of the claimed solution to providing a networked, multi-participant system and that this solution uses tangible means to follow tangible products thereby providing tangible benefits. Ex. 2005 ¶ 67.

Each of the claims also recites some form of “ordering,” which provides a tangible, real-world impact achieved by the claimed computer technology. *Id.* at ¶ 68. For example, claim 52 requires that the “client software” residing on the at least one storage medium “automatically [order] manufacturer, supplier, or distributor inventory which best fulfills said inventory restocking parameters provided by said customer in light of said evaluation.” The collection, storage, and processing of information from multiple parties, as recited in the claims, thus does simply recite computerized data processing in the abstract. Rather, specific information is collected, stored in the database, and then processed in a novel way to trigger an operation in the real world. *Id.*

The selective database access provided in the challenged claims is also a non-abstract technical feature. As explained in section IV(B)(3) above, the claims recite a software interface that restricts access to certain portions of the database based on the roles or permissions of the users. Such an interface is not an abstract concept but rather a physical and logical barrier that prevents unauthorized database access by remote users. *Id.* at ¶ 69. When the specially programmed software interface of the claims operates on a database server, the physical operation of that server, including its responses to user inputs, is altered. *Id.*

The petition and the Siegel declaration mischaracterize and grossly oversimplify the challenged claims. *See* Ex. 2005 ¶ 70. The challenged claims recite a specific type of inventory management computer system that bears little relation to the broad idea of inventory management and the historical inventory management practices referenced in the petition and in the Siegel declaration. As

explained above (see section III), VMI computer systems were developed in the 1980s and 1990s, though with limited adoption. As an initial matter, the VMI computer systems available prior to March 2000 were already far more advanced and specific than these ancient practices. Dr. Thomas explains that one of ordinary skill would have understood that VMI itself is something much more specific than inventory management in general. *Id.*

Furthermore, the claimed invention relates to an even narrower subset of VMI computer systems. *Id.* at ¶ 71. Dr. Thomas explains that a POSA would have understood that the claims are not directed to VMI generally, but are in fact directed to a particular type of VMI that uses networked computer hardware that is specially programmed to collect and store specific information from multiple suppliers and one or more customers and then process that information to provide a tangible, real-world result. *Id.*; *see also supra*, sections IV(B) & V(B).

The petition does not analyze the claims in the context of VMI. In fact, Petitioner goes the opposite route, arguing that VMI is not relevant to the analysis in an effort to sidestep the technological improvements provided by the invention and characterize the claims as generic and abstract. *See, e.g.*, Paper 1 at 1 (stating that while the ‘538 patent “purports to describe a vendor managed inventory (‘VMI’) system . . . [the] claims however are much more abstract, reciting nothing more than the generic computer implementation of the abstract idea of inventory management”); *id.* at 24 (same).

Petitioner’s failure to account for the nature of the invention, as reflected in the claims, was confirmed by its expert during cross-examination. First, Dr. Siegel

acknowledged that the '538 patent says it is directed to VMI:

Q. So you agree that the '538 patent is directed to a VMI system?

A. I agree that's what it says. That's what the patent says.

Ex. 2007 at 89:15-18. Dr. Siegel then acknowledged that VMI is not the same thing as inventory management, but rather refers to a narrower subject:

Q. Is inventory management the same thing as vendor managed inventory?

[objection omitted]

A: I don't – I don't think that they're the same thing. I don't think that they are the same words. Inventory management would cover a large area, and vendor management would cover a smaller area, might fit in there.

...

Q: So as used in the '538 patent, the term "vendor managed inventory" refers to a specific type of inventory management, correct?

A: It refers to inventory management where the shifting of the burden is onto a third party.

...

Q: So it's a specific type of inventory management?

A: It's a type of inventory management done by a third party.

Id. at 98:13-99:17.

Despite acknowledging that the '538 patent says on its face that it is directed to VMI, and that VMI is something more specific than the general concept of inventory management, Dr. Siegel went on to acknowledge that he did not address whether VMI—as opposed to the broader concept of inventory management—is an abstract concept in his declaration, and moreover that he did not even analyze the

claims themselves in the context of VMI:

As the claims are not specifically restricted to vendor managed inventory, *I didn't specifically analyze them just on vendor managed inventory. . . . I was not asked to [analyze VMI] because the claims are not restricted to – specifically to who – who does the inventory management.*

Id. at 110:3-111:13 (“). As discussed above, however, Petitioner and Dr. Siegel overlook many limitations in the claims, as well as the claims as a whole, demonstrating that the claims in fact are directed to a form of VMI in which a unified third-party networked computer system collects, stores, and processes inventory and cost information from multiple sellers and from one or more customers.

The petition’s characterization of the claims as directed to the abstract and ancient idea of inventory management is incorrect. Such a reading ignores limitations of the claims and demonstrates a fundamental misunderstanding of the history of inventory management and its more recent computer implementations. Ex. 2005 ¶ 71.

C. The Claims Include an Inventive Concept

Even if the first *Alice* step were satisfied, which it is not, the challenged claims would nevertheless fail to satisfy the second step because the claims do include the requisite inventive concept. Addressing the existence of an “inventive concept,” the Federal Circuit recently explained that an invention “necessarily rooted in computer technology to overcome a problem specifically arising in the realm of computer networks” was patent-eligible. *DDR Holdings, LLC v.*

Hotels.com, L.P. 773 F.3d 1245, 1257 (2014). The Federal Circuit distinguished the patent-eligible claims in *DDR Holdings* from the patent-ineligible claims in *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709 (Fed. Cir. 2014) by noting that whereas the claims in *Ultramercial* simply claimed “‘use of the Internet’ to perform an abstract business practice (with insignificant added activity),” the claims in *DDR Holdings* specified “how interactions with the Internet are manipulated to yield a desired result” *DDR Holdings*, 773 F.3d at 1258. The court noted that this “result” was different from that of routine and conventional systems. *See id.* The court also stressed that the claim limitations must be “taken together as ordered combination.” *Id.* at 1259. The court further noted that the claims did not preempt every application of the relevant idea, but rather recited a specific way of solving a problem faced by websites on the Internet. *Id.*

Like the claims at issue in *DDR Holdings*, the claims of the ‘538 patent do not simply recite using a computer or the Internet to perform inventory management, or even VMI. *See supra*, section VI(B). Rather, the claims describe a specific improvement over existing approaches to electronic VMI by providing specially programmed computer systems that combine technology in novel ways to address technical inadequacies in existing systems. Dr. Thomas explains that the claims provide meaningful limitations that restrict the claims to a specific implementation of a third-party-managed VMI computer system that defines data structures combining sensitive electronic data from multiple sellers. Ex. 2005 ¶ 72. Dr. Thomas further explains these data structures are secured by software-based data security techniques and analyzed to yield an improved, unconventional

technical result. *Id.* Moreover, when properly viewed as a whole, the claims do not preclude every application of inventory management or VMI over the Internet, but rather recite a specific way of solving problems faced by VMI computer systems. *Id.* at ¶¶ 72-79. The claims therefore include an inventive concept that meaningfully limits the claims beyond the broad notion of computerized inventory management and even the more limited notion of computerized VMI.

First, the challenged claims improve existing technology by providing unconventional computerized inventory ordering via a third-party networked computer system that dynamically analyzes information from multiple sellers in view of customer inventory levels and restocking parameters in order to provide improved, automated decision-making in a multi-seller environment. For example, the claims define the structure and operation of a third-party networked computer system that collects, stores, and processes inventory and cost information from multiple sellers and from one or more customers. Ex. 2005 ¶ 73. Each independent claim defines data structures by requiring that one or more databases combine customer inventory information from one or more customers, inventory information (including product identifiers and numbers of items) and cost information from multiple sellers, and customer inventory restocking parameters. *Id.* Dr. Thomas explains that the particular content and organization of this information was not found in conventional inventory management computer systems, which limited such systems' ability to make certain types of inventory decisions such as, for example, product substitution. *Id.*

The Examiner came to a similar conclusion during the previous *ex parte* reexamination. *See* Ex. 1008 at 6-7. While these are not the only limitations that meaningfully limit the claims beyond inventory management and VMI generally, the Examiner noted that the prior art did not teach or suggest “a database that combines both the claimed ‘customer inventory information’ . . . and the claimed ‘inventory and cost information for a plurality of [sellers]’” Ex. 1008 at 6-7.

The claimed invention does not simply store this information but rather utilizes it to provide more advanced inventory decisions than conventional inventory computer systems. Dr. Thomas explains that by integrating this information into a networked third-party computer system, the computer system obtains increased visibility across entities, enabling more sophisticated automated inventory decisions. Ex. 2005 ¶ 74. For example, Dr. Thomas notes that, unlike conventional systems, the claimed solution can automatically evaluate cost information from multiple sellers of the same or otherwise substitutable products when making restocking decisions. *Id.* For example, the specification notes that the system can “calculate shipping costs as each order is processed, and a server can select one or more suppliers who can most cost effectively meet customer needs.” Ex. 1001, 11:39-46. The specification also notes that the invention can take advantage of temporarily lowered costs from a particular seller (*id.* at 2:3-6), and describes an example database table that stores current prices for each product type offered by each seller, thereby enabling analysis of multiple sellers’ price information when making automated inventory decisions (*id.* at 29:55-65). Thus, as in *DDR Holdings*, the claims do not simply implement a long-standing business

practice using computers and the Internet, but rather provide a specific improvement to existing technology in order to achieve an unconventional result.

This inventive concept is reflected in the claims, for example, in claim 52, which requires that “said software evaluates said customer inventory information and inventory or cost information for a plurality of manufacturers, suppliers, or distributors” and “automatically orders . . . inventory which best fulfills said restocking parameters . . . in light of said evaluation.” Claims 67 and 81 contain similar requirements. While claims 67 and 81 do not state that the ordering takes place “automatically,” claim 67 requires that the evaluating be performed “via a computer,” and the evaluating and ordering in claim 81 is performed by a computer executing the recited computer program product. An equivalent limitation to the “automatic” requirement is found in dependent claims 72 and 84, whereby the software monitors inventory levels and “generates orders to cover anticipated shortages.” The claimed system can also allow more small- or medium-sized companies to take advantage of VMI computer systems. For example, the cross-seller analysis and ordering recited in the claims can reduce overhead costs involved in purchasing from multiple sellers. The claimed system can also potentially result in lower prices for the customer, since the system enables automated substitution of equivalent products by evaluating cost information from multiple sellers. Ex. 2005 ¶ 75.

The inventive concept also includes the claimed software-based selective access to the information stored in the one or more databases. Dr. Thomas explains that prior to March 2000, the exposure of sensitive information via networked

computer systems was a technical problem limiting the adoption of multi-user inventory management computer systems. Ex. 2005 ¶ 76; *see also supra*, section III(C). The challenged claims provide a technical solution to this problem that allows multiple users to collaborate with confidence via a third-party-managed networked computer system that mediates access and information interchange according to permissions or roles. Ex. 2005 ¶ 76; *see also supra*, section V(B). As explained by Dr. Thomas, the claimed solution therefore includes electronic, permission- or role-based database protections that provide the electronic data security supporting the collection, storage, and processing of sensitive inventory and cost information from multiple sellers and, in the case of at least dependent claim 74, multiple customers. Ex. 2005 ¶ 76. These electronic data security measures therefore provide part of the technological improvement by facilitating the collection of the above-described data structures by a third-party networked computer system, thereby enabling the more advanced inventory decisions of the claimed invention. *Id.*

Claim 81 includes additional improvements to technology. As discussed above, independent claim 81 requires that the claimed inventory “tracking” operation involves the recited system “detecting each said inventory item.” Ex. 2005 ¶ 77; *see also supra*, section IV(B)(4). Dr. Thomas explains that this additional limitation is significant because it requires that the system of hardware and software handling the inventory tracking, evaluation, and ordering also be capable of detecting “inventory items [as they] are added to, restocked to, or removed from inventory.” Ex. 1001, claim 81; Ex. 2005 ¶ 77. As explained by Dr.

Thomas, this requires live, Internet-based linkages between the databases at the customer, manufacturer, supplier, and distributor locations, on the one hand, and the server performing the tracking, evaluating, and ordering functions, on the other hand. Ex. 2005 ¶ 77; *see also supra*, section IV(B)(4). It also requires automated detection of “linked supplier” inventories, such as through the vending machine, RFID, or barcode embodiments discussed in the specification. Ex. 2005 ¶ 77; *see also supra*, section IV(B)(4). By requiring specialized hardware and software to enable the recited system to “detect” the status and use of individual inventory items at multiple competitor locations, as opposed to manual tracking of such inventory, claim 81 further improves upon existing VMI technology to yield an improved, unconventional technical result. Ex. 2005 ¶ 77.

Dr. Thomas also explains that the limitations discussed above, viewed as a whole, are not tangential, routine, well-understood, or conventional. Ex. 2005 ¶¶ 29-38, 78. Dr. Thomas also notes that these limitations do not merely append generic computer functionality to conventional techniques. *Id.* Rather, the limitations discussed above, viewed as a whole, define unconventional VMI computer systems and techniques that improve upon then-conventional VMI technology. *Id.* The claims as a whole thus define an unconventional machine or process that produces unconventional results. *Id.* Dr. Thomas also explains that a POSA would have understood that the claims as a whole provide meaningful limitations such that the claimed systems, methods, and computer program products offer significantly more than simply “inventory management on a

computer” or even “VMI on a computer,” and that the claims therefore do not preempt all uses of computerized inventory management or VMI. *Id.*

Thus, as explained above, the claims as a whole are rooted in computer technology and overcome a problem specifically arising in VMI over computer networks. The claims provide an unconventional technical result by providing a third-party networked computer system that collects, stores, and processes inventory and cost information from multiple sellers and from one or more customers. The claimed systems, methods, and computer program products use permission- or role-based restrictions to provide selective database access via client software to information collected from multiple parties. The software thus provides electronic data security that enables third-party collection and storage of sensitive data, such as inventory and cost information from multiple sellers. The resulting data structures provide the basis for more sophisticated computerized inventory processing that can make inventory decisions based on customer inventory information from one or more customers, inventory information (including product identifiers and numbers of items) and cost information from multiple sellers, and customer inventory restocking parameters. The claims as a whole thus include an inventive concept that ensures that the claims offer significantly more than the idea of inventory management on a computer or even the idea of VMI on a computer.

VII. CONCLUSION

The Board should terminate the trial or enter judgment against Petitioner in this CBM review because Petitioner has not provided any credible evidence of

invalidity. The Board cannot and should not substitute its own opinion for the evidence and analysis of record. Instead, the Board should confirm the validity of the involved claims on this record.

Respectfully submitted,

Dated: October 6, 2015

/Michael T. Rosato/
Michael T. Rosato, Lead Counsel
Reg. No. 52,182

APPENDIX – LIST OF EXHIBITS

EXHIBIT NO.	DESCRIPTION
2001	Memorandum from Andrew H. Hirshfeld, Deputy Commissioner for Patent Examination Policy, United States Patent and Trademark Office, to Patent Examining Corps (June 25, 2014) (on file with the United States Patent and Trademark Office).
2002	Almyta Systems, http://www.almyta.com/v3/default.asp?l=en (last visited Mar. 27, 2015).
2003	LinkedIn Profile, Anton Dolinsky, https://www.linkedin.com/in/antondolinsky (last visited Mar. 6, 2015).
2004	Zaarly Profile, Anton Dolinsky, https://www.zaarly.com/profiles/anton (last visited Mar. 6, 2015).
2005	Declaration of Douglas J. Thomas
2006	Douglas J. Thomas, <i>curriculum vitae</i>
2007	Transcript of Deposition of Michael Siegel, Ph.D., August 20, 2015
2008	Jan Holmström, <i>Implementing Vendor-Managed Inventory the Efficient Way: A Case Study of Partnership in the Supply Chain</i> , Production and Inventory Management Journal, pages 1-3 (1998)
2009	Kefeng Xu et al., <i>Towards better coordination of the supply chain</i> , Transportation Research Part E 37, pages 35-54 (2001)
2010	Matt Waller et al., <i>Vendor-Managed Inventory in the Retail Supply Chain</i> , Journal of Business Logistics, Vol. 20, pages 183-203 (1999)
2011	Hau L. Lee et al., <i>Information sharing in a supply chain</i> , Int. J. Manufacturing Technology and Management, Vol. 1, pages 79-93 (2000)

2012	Dale D. Achabal et al., <i>A Decision Support System for Vendor Managed Inventory</i> , Journal of Retailing, Vol 76, pages 430-454 (2000)
2013	Birendra K. Mishra et al., <i>Retailer- vs. Vendor-Managed inventory and Brand Competition</i> , Management Science, Vol. 50, pages 445-457 (2004)
2014	Ian Graham et al., <i>The Dynamics of EDI Standards Development</i> , Technology Analysis & Strategic Management, Vol. 7, pages 3-20 (1995)
2015	Paul Chwelos et al., <i>Research Report: Empirical Test of an EDI Adoption Model</i> , Information Systems Research, Vol.12, pages 304-321, (2001)
2016	Kevin K.Y. Kuan et al., <i>A perception-based model for EDI adoption in small business using a technology-organization-environment framework</i> , Information & Management 38, pages 507-521 (2001)
2017	Mümin Kurtulus et al., <i>Chapter 5: Category Captainship Practices in the Retail Industry</i> , Retail Supply Chain Management, pages 79-98 (2009)
2018	Andrew Blatherwick, <i>Insights from industry: Vendor-managed inventory: fashion fad or important supply chain strategy?</i> Supply Chain Management, Vol. 3, pages 10-11 (1998)

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. §§42.6(e) and 42.105(a), this is to certify that I caused to be served a true and correct copy of the foregoing Patent Owner Response and corresponding Exhibit nos. 2005 through 2018, on October 6, 2015, on the Petitioner at the correspondence address of the Petitioner as follows:

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LIFE TECHNOLOGIES CORPORATION,
Petitioner,

v.

UNISONE STRATEGIC IP, INC.,
Patent Owner.

Case CBM2015-00037
U.S. Patent No. 6,996,538

PETITIONER'S REPLY BRIEF

I. INTRODUCTION

In an attempt to skirt *Alice*, Patent Owner's Response tries to import many limitations from the specification into the claims. Even if this kitchen-sink approach were proper, which it is not, everything the Patent Owner points to is merely routine or conventional technology. The '538 patent describes a system that uses only conventional and commercially available software and hardware. Even Patent Owner's expert admits that virtually any computer could be used to implement the '538 patent. The challenged claims simply cannot survive *Alice*.

Patent Owner's claim re-drafting includes rewriting the preambles of the independent claims. As drafted, those preambles simply recite "inventory management" or "managing customer inventory," an abstract idea satisfying the first step of the *Alice* analysis. In an attempt to save its patent, Patent Owner argues that its claims should be interpreted to require "vendor managed inventory" ("VMI"), where another party manages the inventory on behalf of the company that owns the inventory, suggesting, incorrectly, that VMI is not an abstract idea. Yet, as the Patent Owner even admits, VMI was practiced in the 1980s. POR at 4. Regardless of how they are interpreted, the claims cover an abstract idea, satisfying the first step of the *Alice* analysis.

The next step in the *Alice* analysis is to determine whether what remains is merely "conventional and routine." Here, it is beyond a doubt that the remaining

elements of the claim meet that description. At deposition, Patent Owner's expert admitted not only that the '538 patent does not require specialized computers, but also that the underlying method of the challenged claims can be performed manually. Importantly, as Petitioner shows below, any technical features allegedly recited by the claims are performed by the commercially available software referenced in the '538 Patent.

II. SUPPLEMENTAL DECLARATION OF DR. SIEGEL

Patent Owner's Response makes multiple incorrect claims about the then-existing state of technology as of the '538 Patent's March 2000 priority date. For example, Patent Owner, as well as its expert, claim that the "Internet," "TCP/IP," "relational database systems," "objected-oriented programming," "wireless communication networks," and "electronic data interchange (EDI)" were "recent advancements' in technology." POR at 6; Ex. 2005 at ¶ 28. Object-oriented programming and EDI are nowhere mentioned in the '538 Patent, and wireless communications is mentioned in only a single throw-away sentence in the patent's specification. In his supplemental declaration, Dr. Siegel demonstrates that the Internet, TCP/IP, and relational databases were conventional as of March 2000. Dr. Siegel also shows that the other technical features on which Patent Owner relies (*e.g.*, role-based permissions and network security) were conventional, provided by the commercially available software mentioned in the '538 Patent.

See Ex. 1027 at ¶¶ 7-22.

III. THE ‘538 PATENT QUALIFIES AS A COVERED BUSINESS METHOD PATENT

A. The ‘538 Patent is not a technological invention

Patent Owner’s Response tries to convince this Board that the ‘538 Patent is somehow a technological invention. The Response argues that Petitioner never demonstrated that “the hardware and software mentioned in the petition provide the claimed features right out of the box,” (p. 24), that the challenged claims rely upon “providing permission- or role-based database access” (p. 26), “networked computer hardware” (p. 25), “business rules” (p. 27), and that the “recited technical features . . . were neither conventional nor obvious in March 2000” (p. 25), including “the exposure of sensitive information via networked computer systems [which] was a technical problem” (p. 29). Those arguments are simply wrong.

Most of what Patent Owner argues is not even claimed. Even if such technical features were claimed, those features are all conventional, and any technical problems the Patent Owner identifies were already solved by the commercial software referenced by the ‘538 Patent.

Patent Owner supports its technical argument with testimony from a supply-chain management academic, Dr. Thomas, who had never taken a database class. *See* Ex. 1029 at 109:18-19. Had he taken a database class, he would have learned

that the technical features upon which Patent Owner relies were all conventional. He also would have learned that databases have provided user-based and role-based access controls since their earliest days. In his 1977 seminal book on databases, C.J. Date wrote about permissions, stating that “the system will maintain a *user profile* . . . giving details of the operations this user is allowed to perform.” Ex. 1021 at 378. Also, Date applied those permissions to roles: “For example, a request to see an employee’s assessment may be granted only if the database includes the information that the requestor is the employee’s manager.” *Id.*; Ex. 1027 at ¶ 17. In fact, Date describes relational databases using inventory management as an example, discussing the relationships between suppliers, parts, and a customer. *See* Ex. 1021 at 40-41; *see also* 34-43. In table 4.7, he even shows multiple suppliers (S1, S2, S3, and S4) supplying the same part (P2) in different quantities. *Id.* at 40; Ex. 1027 at ¶¶ 11-16.

Not only are databases with role-based permissions old, but that technology is provided by the very commercial software that the ‘538 Patent utilizes, not anything the ‘538 Patent “invented.” SQL Server is identified in the patent as an example of the Database Server 230. Ex. 1001, 5:15-16 (“Database Server 230 represents commercially available database software, such as Microsoft SQL Server. . . .”). SQL Server 7.0 was commercially available in 1998, well before the ‘538 Patent’s March 2000 priority date. Ex. 1026. It is SQL Server 7.0 that

provided the role-based database access on which Patent Owner now relies:

Roles

Roles allow users to be collected into a single unit against which permissions can be applied. Permissions granted, denied, or revoked from a role also apply to any members of the role. Roles can represent a job performed by a class of workers in an organization. Permissions can then be granted to that role. As workers rotate into the job, they are made members of the role; as they rotate out of the job, they are removed. This removes the requirement to repeatedly grant, deny, and revoke permissions to or from individuals as they accept or leave a job. Roles are used much like Windows NT groups are used.

Ex. 1022 at 3; Ex. 1027 at ¶¶ 18-19. Also, Windows NT, the operating system on which SQL Server ran, is a network operating system that provides comprehensive network security in a client/server architecture.

Client/Server Computing

The Windows NT operating system is designed for client/server computing. Client/server computing generally means connecting a single-user, general-purpose workstation (client) to multiuser, general-purpose servers, with the processing load shared between both. The client requests services, and the server responds by providing the services.

Ex. 1024 at 6; *see also* Ex. 1022 at 1-2.

Microsoft included security as part of the initial design specifications for Windows NT, and it is pervasive in the operating system. The security model includes components to control who accesses which objects (such as files and shared printers), which action an individual user can take on an object (such as write access to a file), and which events are audited.

Id. at 43; Ex. 1027 at ¶ 20. Controlling who can access an object includes role-based permissions. In Windows NT, objects have a security descriptor that includes “[a] discretionary access control list (ACL), which identifies the users or groups who are granted or denied access permissions.” Ex. 1024 at 49. Because of Windows NT’s comprehensive security, the National Computer Security Center (NCSC) gave Windows NT a “C2” security classification, which is the highest security level in class “C,” the class generally applied to business software. Ex.

1024 at 70-72; Ex. 1027 at ¶ 21.

Not only are Patent Owner's, and its expert's, arguments wrong, but such arguments should also be dismissed because Dr. Thomas failed to study either SQL Server or Windows NT as part of his work on this case. *See* Ex. 1029 at 132:22-133:2; 136:13-16. Had Dr. Thomas studied SQL Server and Windows NT, he would have learned that SQL Server provided the permissions or role-based database access and Windows NT—the operating system on which SQL Server ran—provided network security *out of the box*. Patent Owner's argument that the '538 Patent is somehow a technological invention is baseless, because the patent simply relies on commercially available software. Ex. 1027 at ¶ 22.

Finally, Patent Owner argues that mere “business rules” are some sort of technological feature, but they are not. As Dr. Thomas admitted in his deposition, business rules are simply a bunch of rules on how to run a business, such as reordering a product when stocking levels are low:

Q. So businesses come up with a bunch of rules on how to run their business, and they've been expressed as a business rule; right?

A. As a set of instructions, yes.

Q. Now, would a business rule include reordering pacemakers once our inventory hits ten?

A. I – I suppose a business rule could take the form of taking in information about current inventory and recommending an

action. (Ex. 1029 at 167:19-168:2)

Moreover, Congress has explained that a business process, even if novel, is not technological. *See, e.g.*, Ex. 1030 at S1364; *see also* Ex. 1027 at ¶ 23.

Patent Owner’s reliance on role-based database access, unclaimed network security, and unclaimed business rules does not advance its case. Database access control and network security are conventional technologies, provided by the commercially available software that the ‘538 Patent uses. Also, business rules are not technical, but merely reflect the rules that one’s business follows. There is simply nothing technical about the ‘538 Patent. Ex. 1027 at ¶¶ 17-23.

Patent Owner also complains that the Petition “contains no prior art analysis that even purports to demonstrate that the recited systems and methods would have been obvious.” POR at 24. Yet, that is not a requirement. Per the PTO’s rule making, the mere “recitation of known technologies,” “reciting the use of known prior art technology” and “combining prior art structures to achieve the normal, expected, or predictable result of that combination” does not support a finding of a technological invention. *Versata Dev. Grp., Inc. v. SAP Am., Inc.*, 793 F.3d 1306, 1326 (Fed. Cir. 2015). As Petitioner has shown, that is the case here.

Importantly, the Federal Circuit found that a claim where “no specific, unconventional, software, computer equipment, tools or processing capabilities are required” did not solve a technical problem using a technical solution. *Versata*,

793 F.3d at 1327. Again, that is the case here. Notably missing from Patent Owner's response is any meaningful discussion of *Versata v. SAP*, controlling precedent for this determination. That is not surprising because any discussion of *Versata* dooms Patent Owner's case.

B. The '538 Patent is directed to a financial product or service

Patent Owner argues that claiming “collecting cost information and ordering inventory is not sufficient to demonstrate that [the claims] are directed to a financial activity, as no financial transactions are recited in the challenged claims.” POR at 32. In making this argument, Patent Owner again ignores the Federal Circuit's guidance in *Versata*. The Federal Circuit held that the definition of covered business method patent “covers a wide range of finance-related activities.” *Versata*, 793 F.3d at 1325. And, the Federal Circuit acknowledged the PTAB's definition that “[t]he term financial is an adjective that simply means relating to monetary matters,” and recognized that “the expertise of the USPTO entitles the agency to substantial deference.” *Id.* at 1324-25. There, the Federal Circuit found that a method for determining a price for a product offered to a purchasing organization falls “well within the terms of the statutory definition of a ‘covered business method patent.’” *Id.* at 1325-26. Here, claim 62 recites “client software allows users to specify a price for goods for sale within an inventory.” Ex. 1001, cl. 62. *Versata* and the instant case are virtually indistinguishable—the '538 Patent

is a covered business method patent.

IV. THE CHALLENGED CLAIMS ARE PATENT INELIGIBLE UNDER 35 U.S.C. § 101

Ever since commerce began many centuries ago, businesses had inventories and necessarily had to manage those inventories. Patent Owner does not argue otherwise. Instead, Patent Owner complains that the Petition set forth an insufficient amount of evidence to show that inventory management is an abstract idea. Rather than attempt to show that Dr. Siegel's recounting of the history of inventory management is inaccurate, which it cannot do, Patent Owner relies solely on the admissibility of several articles that he relies upon. Notably, Patent Owner does not challenge all of Patent Owner's evidence, only some of it. Yet, even Patent Owner's expert admits that inventory management is widely taught at business schools, that inventory management was a well published topic with academics publishing research as early as the 1960s, and that businesses have been dealing with inventory issues for a very long time. In fact, he does not find any fault with Dr. Siegel's history of inventory management or the articles on which he relies. Inventory management is thus "a fundamental economic practice long prevalent in our system of commerce." *Alice Corp. Pt. Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2356 (2014).

For example, Patent Owner's expert testified that most business schools today teach classes in inventory management. Ex. 1029 at 21:24-22:9. Although

Patent Owner's expert did not know much about what other business schools were doing before the early '90s, he did admit that Penn State taught classes on "business logistics" as early as 1960 (Ex. 1029 at 14:10-14), and even his alma mater, Georgia Tech, taught inventory management classes in the early 1990s. Ex. 1029 at 20:3-6. In fact, Dr. Thomas admitted that "the mathematics of the decision-making models" behind inventory management was also taught at Georgia Tech in the early 1990s. Ex. 1029 at 20:11-24.

As he had to, Dr. Thomas admitted that inventory management was a well published topic before March 2000. He testified about a text book, "Inventory Management and Production Planning," that was published before the early 90s and described "how much inventory to order given a variety of other parameters." Ex. 1029 at 22:25-23:17. In fact, journal articles describing inventory management theory appeared as early as the 1960s:

Q. What other books are you aware of and articles before 1999 that described inventory management?

A. So there are a variety of journal articles that we studied that we relate to inventory management. Some early paper in the 1960s by a scholar named Arrow that talks about the – basically the applied probability, the mathematics of the underlying inventory models. Ex. 1029 at 23:18-24:2; *see also* 39:12-40:19.

Q. Okay. So—but the first articles that you're aware of regarding

how much inventory to buy and when to buy it started in the early '60s; is that right?

A. There were papers from that time on that topic. Ex. 1029 at 25:24-26:4.

Q. Inventory management generally was a well-published field before you took classes in it in the early '90s, wasn't it?

A. So the mathematics, the science of dealing with uncertain demand and uncertain supply for a single decisionmaker managing their own inventory was a well-published topic. There are lots of influential scholarly works prior to 1999. Ex. 1029 at 24:20-25:4.

Dr. Thomas even testified that inventory forecasting articles appeared in the 1950s and 1960s (Ex. 1029 at 42:12-20), and that inventory tracking was written about in textbooks before the 1990s (*Id.* at 47:15-48:7). Finally, Dr. Thomas admitted that companies were dealing with inventory issues before the 1960s. (*Id.* at 75:4-76:7). Based on Dr. Thomas's admissions, it cannot reasonably be disputed that inventory management is a fundamental economic practice that dates back many decades.

Further undercutting Patent Owner's argument is that its expert did not find fault with Dr. Siegel's recounting of inventory management's history. He had to admit that businesses were counting inventories for a very long time, and he could not criticize Dr. Siegel's evidence:

Q. But sitting here today, you can't think of anything wrong with Dr. Siegel's recounting of the history of inventory management;

is that right? . . .

A. What I recall from his declaration is that he offered – he offered other references that claim people counted how much stuff they had. They managed – they looked at the amount of inventory that they had and kept track of it for a long time ago, and I don't disagree that people wrote that and that he correctly recounted people wrote this and *a long time ago they kept track of how much inventory they had*. Ex. 1029 at 80:11-23 (emphasis added).

Q. And you don't have any basis to dispute that the articles that Dr. Siegel cited to were incorrect; is that right? . . .

A. I – I do not have any reason to believe that he improperly cited those articles or that those articles are somehow incorrect or flawed. Ex. 1029 at 80:25-81:7.

Indeed, Dr. Siegel independently confirmed the accuracy of the references he cites in his declaration by cross-referencing them with books and other sources from MIT's library. Ex. 2007 at 36:22-27:7. Because neither Patent Owner nor its expert identified anything incorrect about the references on which Dr. Siegel relies, and because Dr. Siegel cross-referenced those articles to confirm their accuracy, there is no reason for this Board not to consider Dr. Siegel's testimony and the exhibits that he used. In fact, at least one other group of scholars has cited to Almyta webpages as part of their scholarly work. *See* Ex. 1031.

V. THE CLAIMS ARE DIRECTED TO AN ABSTRACT IDEA

Patent Owner narrowly construes every word of its claims and attempts to

import substantial sections of its specification into its claims in the hope of persuading this Board that its claims do not recite an abstract idea. But, that is just not how the first step of the *Alice* analysis works. In step one, the Supreme Court “first determine[s] whether the claims at issue are directed to a patent-ineligible *concept*.” *Alice*, 134 S. Ct. at 2355 (emphasis added); *see also Internet Patent Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1346 (Fed. Cir. 2015) (“Under step one of *Mayo/Alice*, the claims are considered in their entirety to ascertain whether their character as a whole is directed to excluded subject matter”). The search is for a concept, an abstract idea. Once found, the Supreme Court then asks “[w]hat else is there in the claims before us?” *Alice*, 134 S. Ct. at 2355 (quoting *Mayo*). In other words, the two-step *Alice* analysis recognizes that the abstract idea may be recited in only a portion of the claim, and once found, the court looks at the remainder of the claim. Patent Owner’s attempt to import wholesale limitations from the specification into the entire claim is thus directly contrary to the Supreme Court’s most recent § 101 pronouncement.

On their face, the claims at issue here are all directed to the abstract idea of inventory management. *Alice*, 134 S. Ct. at 2356 (“On their face, the claims before us are drawn to the concept of intermediated settlement. . . .”). The preambles of each challenged claim recite “inventory management” or “managing customer inventory” and the steps of the claims describe using inventory information to

track and order inventory. Thus, the Board should conclude that the challenged claims are directed to an abstract idea and then move onto *Alice*'s step two.

Patent Owner argues that the challenged claims are not directed to an abstract idea because the claims are “rooted in recently developed (as of March 2000) computer technology, including specially configured databases, networked computers, computerized inventory tracking technology, and custom computer software.” POR at 45. Not only is this an improper legal analysis, but it is factually wrong as well. Relational databases were not “recently developed (as of March 2000),” and in any event, this functionality was provided by SQL Server, a readily available commercial product. And, the unclaimed network security was provided by Windows NT, the network operating system on which SQL Server ran. Ex. 1027 at ¶¶ 11-22.

Moreover, the ‘538 Patent discloses that tracking could be done manually: “Customer Inventory Systems 130 may allow manual inventory tracking. . . .” Ex. 1001, 3:3-5. The patent goes onto explain an embodiment where a doctor sends a message that is “displayed at a nurse’s station indicating the items to be pulled from inventory.” Ex. 1001, 4:1-2. And when “items . . . are pulled from inventory, inventory counts can be decremented as appropriate, and new orders placed as necessary.” *Id.* at 4:3-5. The ‘538 patent expressly discloses manual tracking, *e.g.*, by a nurse.

The only custom software that the Patent Owner can point to are unclaimed business rules. As discussed above, the generic rules by which one runs their business are not technical, and are certainly not newly developed technology.

Lastly, the Patent Owner complains that the “petition does not analyze the claims in the context of VMI.” POR at 47. The claims are not specifically limited to VMI, but even if they were, that too is an abstract idea. Ex. 1027 at ¶ 3.

Whether a company manages its inventory itself or has it managed by another, both are abstract ideas. *See Allscripts Healthcare Solutions Inc. v.*

MyMedicalRecords, Inc., CBM2015-00022, Paper 10 at 15 (PTAB May 5, 2015)

(“Management or control by the user or patient rather than by the health care provider is a method of organizing a human activity.”) Patent Owner readily admits that VMI was being used in the late ‘80s, and it even relies on a reference from 1987 that shows that VMI was being used in the healthcare industry—just like the ‘538 Patent.

exist in the literature. For example, while VMI in the health care industry is becoming increasingly more popular, confusion exists as to when and why it is effective (Gerber, 1987).

Ex. 2009 at 36.

But, Patent Owner is not telling this Board the whole story. VMI was used decades earlier, for example, by the defense logistics agency (DLA). The DLA, and pre-cursors to the DLA, have used VMI since the mid-1950s when “commodity manager agencies (called ‘single managers’) were established to buy,

store and issue supplies, manage inventories, and forecast requirements.” Ex. 1025. At that time, the Army managed food and clothing; the Navy managed medical supplies, petroleum, and industrial parts; and the Air Force managed electronic items,” and in each category, the single manager reduced its investment by centralizing wholesale stocks and simplifying the supply process for all armed services. *Id.* Ex. 1027 at ¶¶ 4-6.

VI. THE CLAIMS DO NOT INCLUDE AN INVENTIVE CONCEPT

Patent Owner’s first inventive-concept argument is based on the claims’ requirement that “one or more databases combine customer inventory information from one or more customers, inventory information . . . and cost information from multiple sellers, and customer restocking parameters.” POR at 51. The generic recitation of a database that stores information received from various sources cannot confer patent eligibility under § 101, because it amounts to conventional computer activities or routine data-gathering steps. *OIP Techs., Inc. v.*

Amazon.com, Inc., 788 F.3d 1359, 1363 (Fed. Cir. 2015) (“Beyond the abstract idea of offer-based price optimization, the claims merely recite ‘well-understood, routine conventional activit[ies],’ either by requiring conventional computer activities or routine data-gathering steps.”). Even if the information were new, that does not change the patent-ineligibility outcome because all that the ‘538 Patent does is take the abstract idea of inventory management and apply it to a computer.

See Ultramercial, Inc. v. Hulu, LLC, 772 F.3d 709, 716 (Fed. Cir. 2014) (“That some of the eleven steps were not previously employed in this art is not enough—standing alone—to confer patent eligibility. . . .”).

Next, Patent Owner relies on automatic or computer-based inventory evaluation and ordering. POR at 53. But, that too fails to confer patent eligibility because “relying on a computer to perform routine tasks more quickly or more accurately is insufficient to render a claim patent eligible.” *OIP Techs.*, 788 F.3d at 1363. In fact, the Federal Circuit spoke emphatically on this point, “our precedent is clear that merely adding computer functionality to increase the speed or efficiency of the process does not confer patent eligibility on an otherwise abstract idea.” *Intellectual Ventures I LLC v. Capital One Bank*, 792 F.3d 1363, 1370 (Fed. Cir. 2015); *See also Westlake Servs., LLC v. Credit Acceptance Corp.*, CBM2014-00008, Paper 66 at 32 (PTAB Mar. 24, 2015) (“There can no longer be any doubt that, standing alone, computer elements of a claim do not make a claim patentable”).

Moreover, even if the Board were to adopt Patent Owner’s over-inflated view of the challenged claims’ scant computer recitations, the underlying process can be performed manually, and this renders the claims patent ineligible. *See Versata*, 793 F.3d at 1335. Here, Patent Owner’s expert admitted that the underlying process of the claims can be performed manually. As to claim 67–

which the Petition shows is nearly identical to the other challenged independent claims (*See e.g.*, Pet. at 50, 55)—he testified that:

[O]ne could write this information down in a ledger, which is a form of a database, do a query manually, flip through and count how many times certain things appeared, and make the calculations that are specified here by doing a bunch of calculations or could involve looking up, you know, things for inventory formulas, aspects of inventory formulas that need to be referenced to make the restocking decisions. Ex. 1029 at 208:13-209:20.

Dr. Thomas also admitted that the underlying process of claim 70 could be done manually. Ex. 1029 at 210:17-211:1. And, Dr. Thomas admitted that a human being could monitor inventory, report that the supply was inadequate, monitor inventory levels, and generate orders to cover anticipated shortages, thereby admitting that the underlying method of claims 71 and 72 can be performed manually. Ex. 1029 at 212:15-213:9.

Like the other sections of its Response, Patent Owner once again asserts that unclaimed network security and role-based permissions are inventive concepts.

“Dr. Thomas explains that prior to March 2000, the exposure of sensitive information via networked computer systems was a technical problem limiting the adoption of multi-user inventory management computer systems.” POR at 53-54.

But, as shown above, this is simply untrue. SQL Server and Windows NT solved these problems and the ‘538 Patent merely used those commercially available

features – this is not an inventive concept. Ex. 1027 at ¶¶ 17-22.

Patent Owner’s reliance on the only Federal Circuit case post-*Alice* to find claims patent-eligible, *DDR*, is also misplaced. *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014). The claims here are not rooted in computer technology and do not overcome a problem specifically arising in computer technology, and thus, *DDR* is inapplicable. In *Versata*, the Federal Circuit recognized that *DDR* is only applicable to a situation where the claims recited “a solution that was necessarily rooted in computer technology to overcome a problem specifically arising in the realm of computer networks.” *Versata*, 793 F.3d at 1333. In fact, the Federal Circuit specifically distinguished between that situation and the situation here where the claims “merely recited commonplace business methods aimed at processing business information, applying known business processes to particular technological environments.” *Id.*; see also *Intellectual Ventures*, 792 F.3d at 1371 (“The patent claims here do not address problems unique to the Internet, so *DDR* has no applicability.”).

Patent Owner then makes a preemption argument by arguing that “the claims do not preclude every application of inventory management.” POR at 51. But preemption is no longer a viable, stand-alone test for § 101. See *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F. 3d 1371, 1379 (Fed. Cir. 2015) (“The Supreme Court has made clear that the principle of preemption is the basis for the

judicial exceptions to patentability. *Alice*, 134 S.Ct. 2354 . . . For this reason, questions on preemption are inherent in and resolved by the § 101 analysis.”); *see also Cambridge Associates, LLC v. Capital Dynamics*, CBM2014-00079, Paper 28 at 19 (PTAB Aug. 31, 2015) (“We need not determine . . . the degree to which such comparisons are preempted by the ‘196 patent claims, in light of our foregoing analysis under *Alice* and *Mayo*.”).

Lastly, Patent Owner argues that claim 81’s tracking requires “detecting each said inventory item,” which Dr. Thomas explains “requires that the system of hardware and software handling the inventory tracking, evaluation, and ordering also be capable of detecting ‘inventory items [as they] are added to, restocked to, or removed from inventory.” POR at 54. This argument is simply untenable in view of claim 81’s express language. First, claim 81 recites computer instructions on a storage medium. By its very nature, this claim cannot recite any hardware. Moreover, the step of tracking inventory items and detecting each inventory item could be performed manually, as the specification admits, with perhaps the user inputting the data to the computer that runs the instructions of claim 81. *See Ex. 1001*, 3:3-5; 4:1-5. In this case, the process is achieved manually, and even if it were not, such tracking of inventory items and updating the databases is mere data gathering and cannot confer patent eligibility.

VII. THE CLAIMS AS A WHOLE ADD NOTHING THAT IS NOT ALREADY PRESENT WHEN THE STEPS ARE CONSIDERED

SEPARATELY

Patent Owner complains in virtually every section of its brief that Petitioner failed to consider the claims as a whole. But this is untrue. Tellingly, Patent Owner makes this argument without identifying anything the claims provide beyond their individual elements. Patent Owner does not argue, because it cannot, that its claims provide an inventive concept by somehow improving the functioning of the computer itself or by effecting an improvement in any other technology or technical field. The claims viewed as a whole simply recite the concept of inventory management as performed by an unspecified, generic computer. Petitioner made this argument throughout its Petition. *See e.g.*, Pet. at 1, 3, 30, 38, 51. On this point, *Alice* is instructive:

Considered “as an ordered combination,” the computer components of petitioner’s method “ad[d] nothing . . . that is not already present when the steps are considered separately.” Viewed as a whole, petitioner’s method claims simply recite the concept of intermediated settlement as performed by a generic computer. The method claims do not, for example, purport to improve the functioning of the computer itself. Nor do they effect an improvement in any other technology or technical field. Instead, the claims at issue amount to “nothing significantly more” than an instruction to apply the abstract idea of intermediated settlement using some unspecified, generic computer. *Alice*, 134 S. Ct. at 2359-60 (citations omitted).

The Federal Circuit has followed suit:

Examination of the claims—as a whole and in terms of each claim’s limitation—reveals that the claims are not directed to improving computer performance and do not recite any such benefit. The claims are directed to price determination and merely use a computer to improve the performance of that determination—not the performance of a computer. *Versata*, 793 F.3d at 1335.

Here, Petitioner considered the claims as a whole, but there is nothing beyond the individual elements. The claims do not improve computer performance; they recite mere generic computer implementation of an abstract idea.

VIII. PATENT OWNER DOES NOT PROPOSE A CLAIM CONSTRUCTION

Patent Owner’s Response includes a section on claim construction that identifies several terms, but does not propose any construction for those terms. Rather, the entire section attempts to import limitations from the specification into the claims. This Board should therefore ignore that section of the Response.¹

First, with respect to “inventory restocking parameters,” Patent Owner cites *In re Lowry* in an attempt to confer patent eligibility onto its deficient claims. Yet, none of the claims explicitly recite a memory as Lowry’s did, and therefore *In re Lowry* is inapplicable. *In re Lowry*, 32 F.3d 1579, 1580 (Fed. Cir. 1994). Here, the challenged claims recite a method, system, and computer program product.

¹ The Federal Circuit has invalidated claims under § 101 without performing a claim construction. *See Ultramercial*, 772 F.3d at 714.

Nowhere do the claims recite a computer memory or even a data structure.

Moreover, even if the claims did, *Lowry* dealt with a printed matter exception under § 103, not § 101, and even if *Lowry* were directed to § 101, it likely would not survive post-*Alice*. *Id.* at 1582, 83.

Second, Patent Owner attempts to import many limitations into “software tracks inventory items,” but the challenged claims do not recite bar code scanners, RFID tags, or any other electronic identification technologies. Even if these limitations were imported into the claims, the specification describes them generically and conventionally. Ex. 1001, 2:32-33; 3:34-43; 8:13-18; *See Content Extraction & Transmission LLC v. Wells Fargo Bank, N.A.*, 776 F.3d 1343, 1348 (Fed. Cir. 2014) (“There is no ‘inventive concept’ in CET’s use of a generic scanner and computer to perform well-understood, routine, and conventional activities commonly used in industry.”). Moreover, the challenged claims say nothing about network connectivity. But even if they had, that would not confer patent eligibility. *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1355 (Fed. Cir. 2014) (“That a computer receives and sends the information over a network—with no further specification—is not even arguably inventive.”). Rather, as mentioned above, the ‘538 Patent states that tracking inventory can be performed manually. Ex. 1001, 3:3-5.

Third, as to “assigned permissions or roles,” Petitioner has addressed this

above as consisting of conventional technology, and Patent Owner’s “claim construction” section for this term does not state anything to the contrary.

Fourth, as to claim 81’s “detecting,” Patent Owner attempts to import RFID portals and tags, vending machines, and bar codes into the claims. The claims recite no such limitations, and the specification describes manual tracking. Ex. 1001, 3:3-5.

In short, Patent Owner requests that this Board import numerous hardware limitations into the claims without providing any rational reason. The Board should decline this invitation.

IX. CONCLUSION

The challenged claims recite nothing more than the generic computer implementation of the abstract idea of inventory management. The Supreme Court’s holding in *Alice* dictates that these claims are patent ineligible. Petitioner respectfully requests the cancellation of the challenged claims.

Respectfully submitted,

OBLON, McCLELLAND,
MAIER & NEUSTADT, L.L.P.

Dated: January 8, 2016

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e), the undersigned certifies service of PETITIONER’S REPLY BRIEF and EXHIBITS 1020-1031 on the counsel of record for the Patent Owner by delivering a copy via electronic mail to the following address:

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US006996538B2

(12) **United States Patent**
Lucas

(10) **Patent No.:** **US 6,996,538 B2**
(45) **Date of Patent:** **Feb. 7, 2006**

- (54) **INVENTORY CONTROL SYSTEM AND METHODS**
- (75) Inventor: **Michael T. Lucas**, Calabasas, CA (US)
- (73) Assignee: **Unison Corporation**, New Castle, DE (US)
- (*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 672 days.

(21) Appl. No.: **09/799,879**
(22) Filed: **Mar. 7, 2001**

(65) **Prior Publication Data**
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(51) **Int. Cl.**
G06F 17/60 (2006.01)

(52) **U.S. Cl.** **705/28**; 705/26
(58) **Field of Classification Search** 705/2,
705/29, 28
See application file for complete search history.

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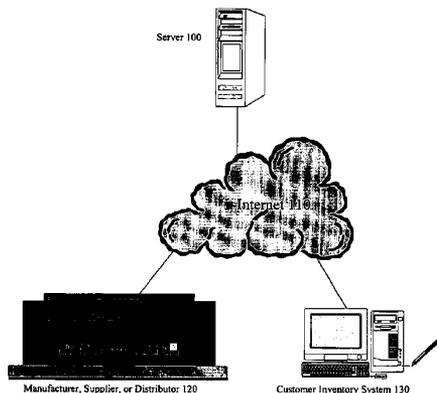
(Continued)

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(57) **ABSTRACT**

A system and method which allows third-parties to monitor company inventory via the Internet and World Wide Web ("web") and automatically order needed items. The present invention also provides a forum through which resellers and customers may directly interact to resell surplus and used equipment. The present invention may also allow a third party to act as a broker, thereby assuring that both the equipment purchased is actually delivered, and that the seller is properly compensated.

96 Claims, 5 Drawing Sheets



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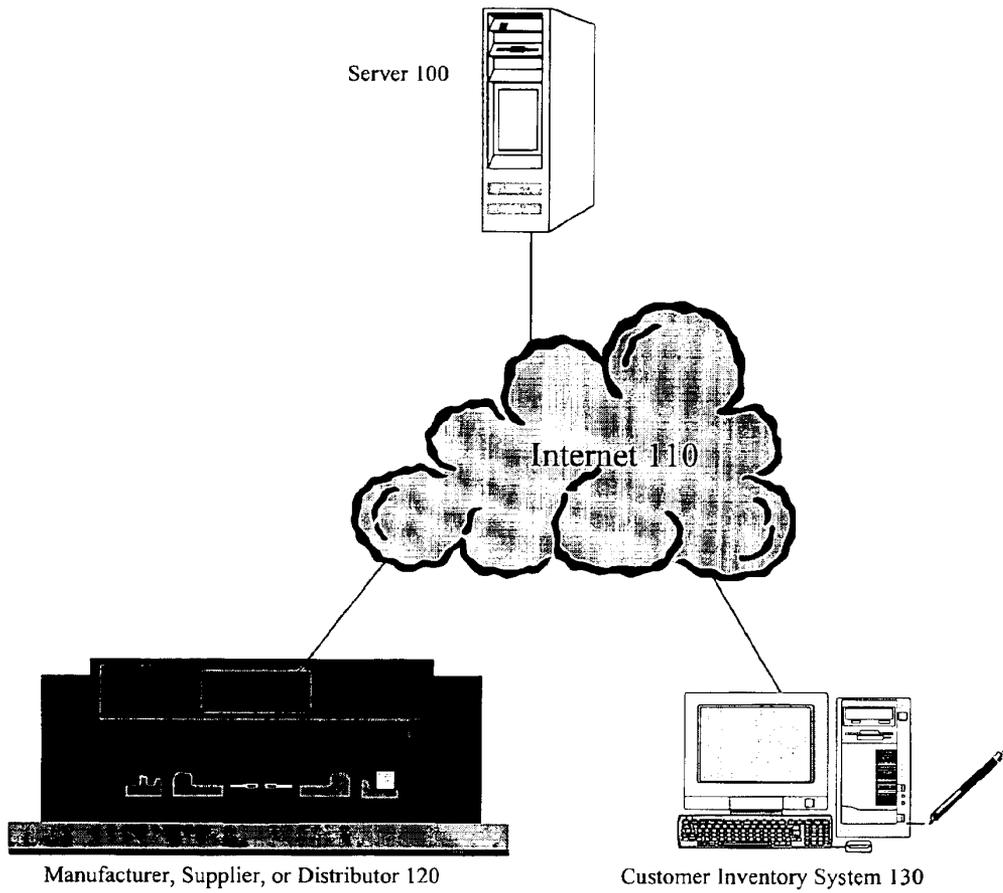


Figure 1

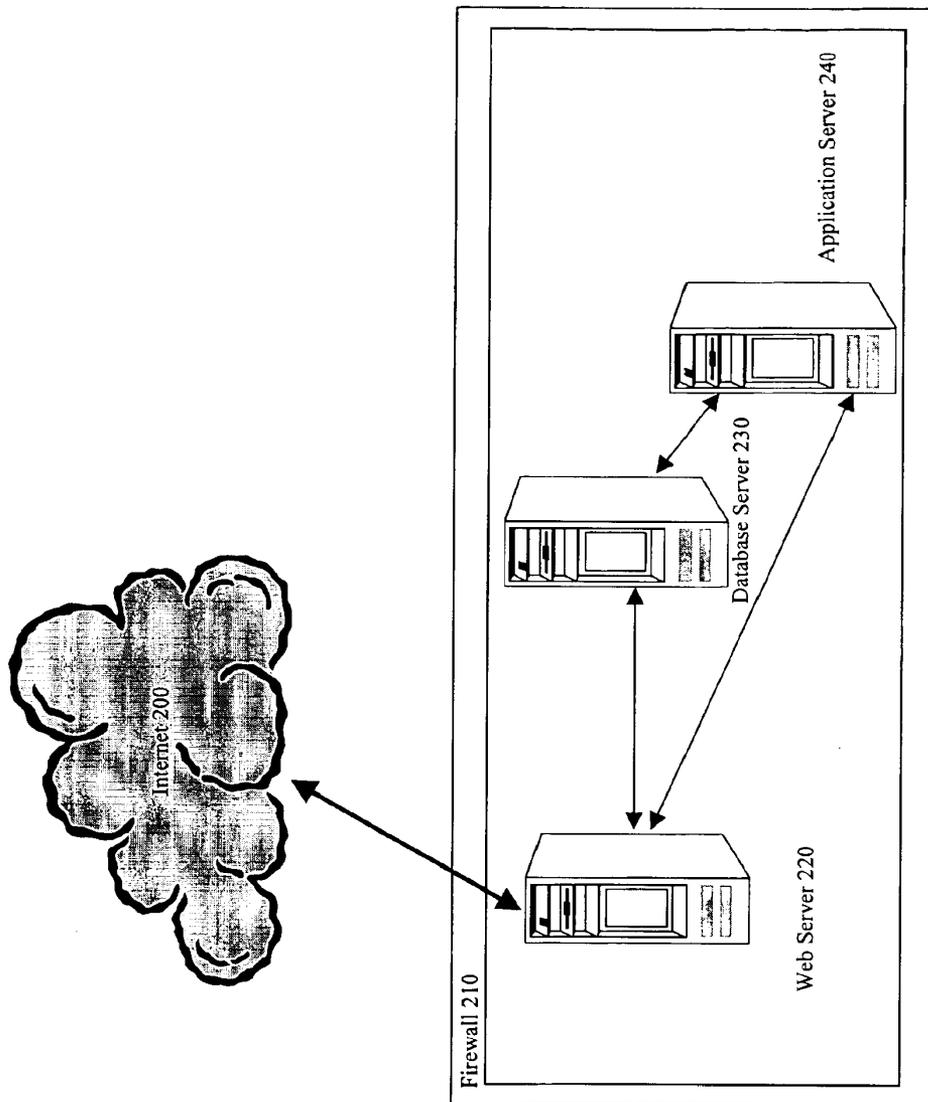


Figure 2

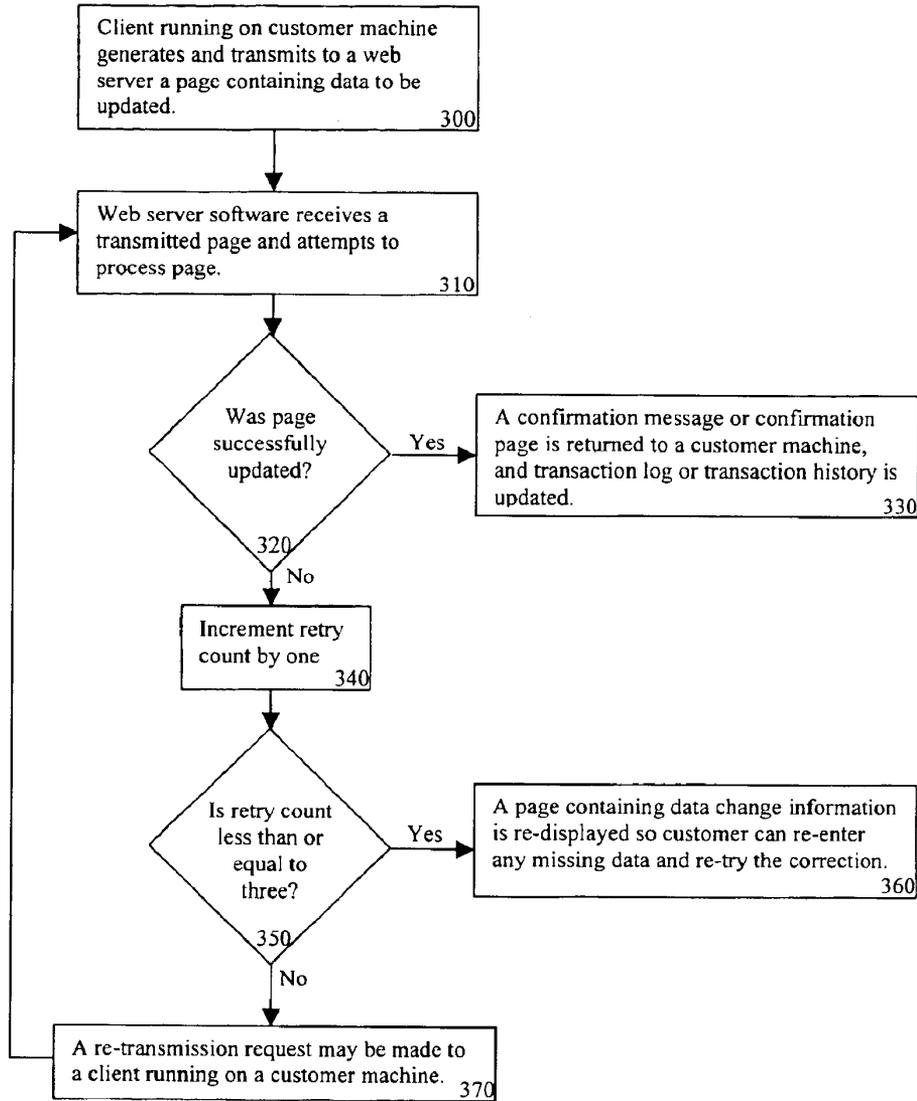


Figure 3

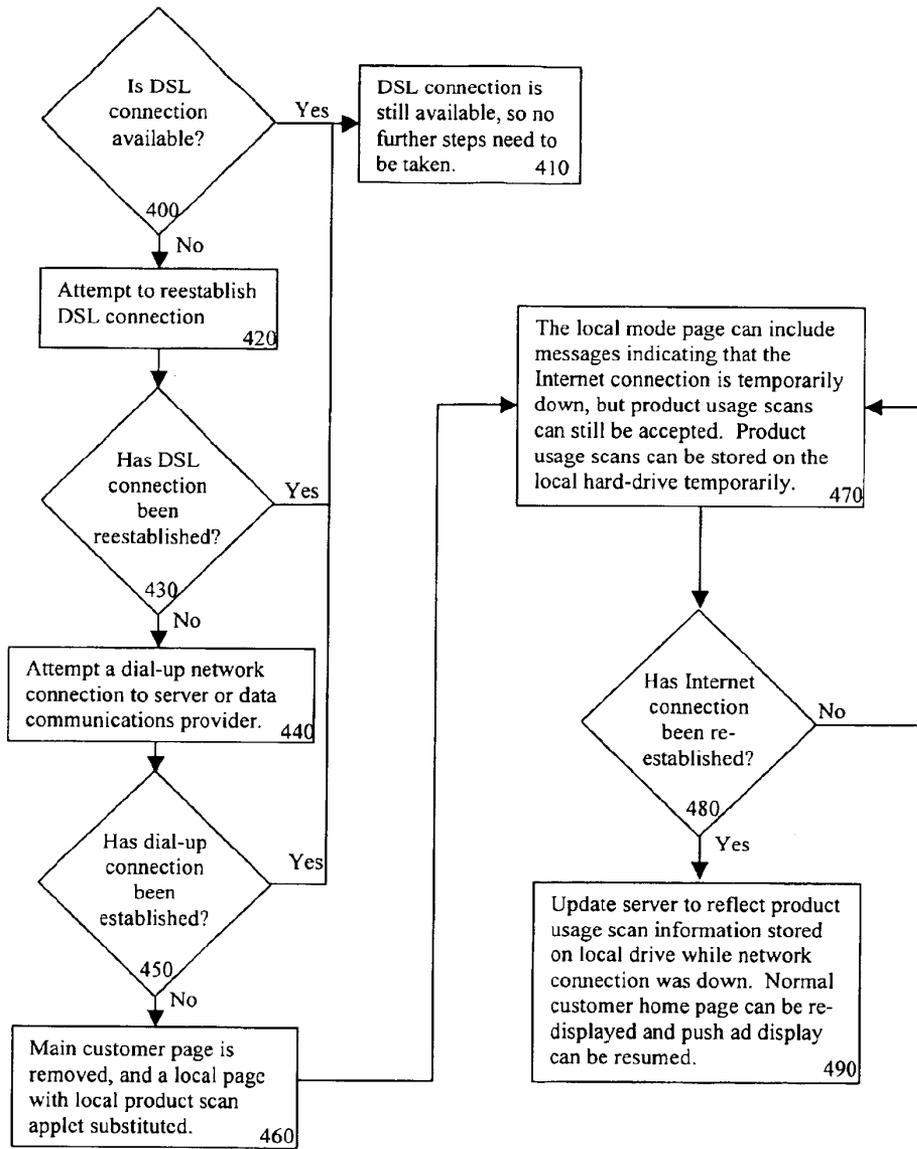


Figure 4

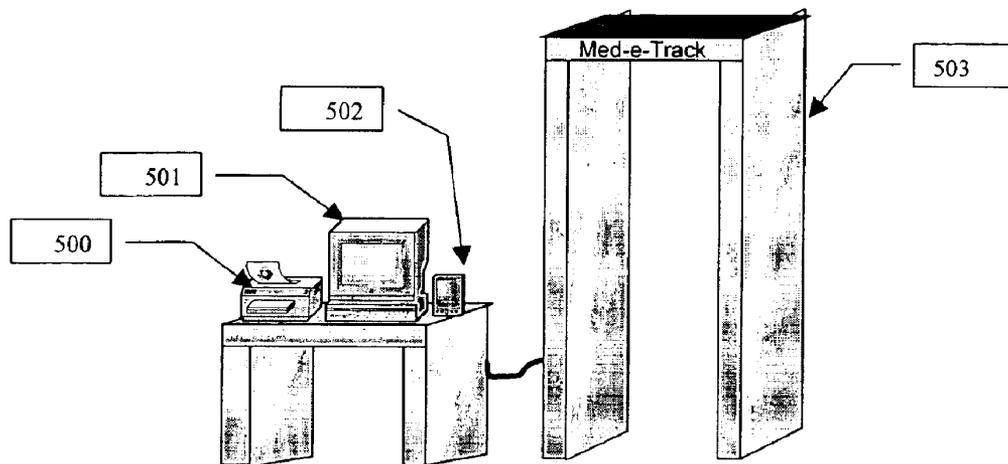


Figure 5

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INVENTORY CONTROL SYSTEM AND METHODS

PRIORITY AND COPYRIGHT CLAIMS

This application claims the benefit of U.S. Provisional Patent Application Ser. No. 60/187,389 filed Mar. 7, 2000, the entire disclosure of which is incorporated herein by reference.

This application includes material which is subject to copyright protection. The copyright owner has no objection to the facsimile reproduction by anyone of the patent disclosure, as it appears in the Patent and Trademark Office files or records, but otherwise reserves all copyright rights whatsoever.

FIELD OF THE INVENTION

The present invention relates to the field of electronic inventory control. In particular, the present invention relates to controlling healthcare supply inventories.

BACKGROUND OF THE INVENTION

Traditionally, inventory control has been done by the company or organization using the items in the inventory. In smaller offices, inventory control is typically not a high priority, and orders may be placed whenever items are out of stock.

As an office increases in size, inventory management becomes more of a challenge, and monitoring of frequently used or crucial items becomes very important. Typically a person is given the responsibility of monitoring inventory and ordering replacements as supply diminishes. As a company further increases in size, more advanced inventory management techniques may be used. For example, supply and usage trends may be analyzed to determine minimum quantities on hand, and seasonal or other peak usage may be determined.

Some larger offices have switched to automated or semi-automated inventory tracking systems. These automated systems utilize barcode scanners or other electronic identifiers to track outgoing and incoming inventory, and can prepare purchase requests as supplies diminish.

SUMMARY OF THE INVENTION

The present invention improves upon the prior art by shifting the burden of inventory tracking onto a third party; this concept is referred to as vendor managed inventory, or VMI. When a third party provides VMI services for multiple companies, it gains significant buying power which it can use to negotiate better deals, improve supplier responsiveness, and streamline the buying process.

The present invention allows third-parties to monitor company inventory via the Internet and World Wide Web ("web"). In addition, the present invention allows small to medium sized companies to take advantage of VMI by providing a cost-effective solution to their inventory tracking needs.

The present invention utilizes web-enabled technologies to revolutionize inventory management by tracking inventory and automatically contacting suppliers, manufacturers, or distributors when additional supplies are needed. This may result in a labor reduction as compared to the labor-intensive inventory maintenance systems currently deployed.

In addition to reducing labor costs, the present invention may help a company cut other costs. The present invention

2

may help reduce delivery costs by regularly ordering supplies in anticipation of need, thus obviating the need for express shipments. The present invention may also allow third parties to take advantage of manufacturer or distributor specials when offered for the products its customers require, thus further reducing customer cost.

While purchasing is a large part of inventory maintenance, the present invention may also facilitate other transactions as well. For example, the present invention may allow customers to resell products or equipment to other businesses, thereby maximizing utility. Although some in the prior art, such as Neoforma.com and Medibuy.com, have attempted to provide business-to-business equipment resale through web-based auctions, auctions do not provide equipment availability assurances. The present invention provides a forum through which resellers and customers may interact, where the present invention acts as a broker, thereby assuring both that purchased equipment is delivered, and that a seller receives proper compensation.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a block diagram illustrating the major hardware components of the present invention.

FIG. 2 is a block diagram illustrating an overview of the software components of the present invention.

FIG. 3 is a process flow diagram illustrating sample logic implemented when client software attempts to update data stored in a server.

FIG. 4 is a process flow diagram illustrating sample logic implemented when client software polls a data connection.

FIG. 5 illustrates a sample RFID portal and related computer equipment.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

The present invention implements an Internet-based, vendor managed inventory ("VMI") system. A VMI system allows a customer to reduce costs by pushing inventory management responsibilities onto a third party, or manager. Managers may service multiple companies, thus allowing them to negotiate better deals, improve supplier responsiveness, and serve as an effective customer advocate.

The present invention allows managers to inexpensively monitor customer inventory via the Internet and World Wide Web ("web"). The present invention utilizes web-enabled technologies to revolutionize inventory management by tracking inventory and automatically contacting suppliers, manufacturers, or distributors when products are needed. This may result in a labor reduction as compared to the labor-intensive inventory maintenance systems currently deployed.

FIG. 1 is a block diagram illustrating the major hardware components of the present invention. As illustrated in FIG. 1, the present invention utilizes a client/server architecture to facilitate communication between customer inventory systems and managers. A client running on a Customer Inventory System 130 may be used to track inventory, place special orders, and interact with other customers.

A client may include custom software, such as an application written in Visual Basic, JAVA, or C; commercial software, such as a web page accessible through a web browser; or a combination of custom and commercial software, such as a "plug-in" which operates in a web browser. Examples of common web browsers include Internet Explorer, developed by Microsoft Corporation of

3

Redmond, Wash., and Navigator, developed by Netscape Corporation of Mountain View, Calif.

Customer Inventory Systems **130** may allow manual inventory tracking, semi-automated inventory tracking, or inventory may be dispensed using automated systems. By way of example, without intending to limit the present invention, a preferred embodiment of the present invention includes a handheld device, such as a Palm VII device by Palm Computing, Inc., to be outfitted with a barcode scanner. Such a device can allow barcodes or other identifiers associated with each inventory item to be scanned or otherwise entered into the system prior to or at the time of item distribution. As each item is scanned, a count maintained by the present invention may be adjusted to properly track inventory levels. Recipient-specific labels, including product warnings and other information, can then be printed for each scanned item.

Other inventory distribution methods contemplated include, but are not limited to, interfacing the present invention with vending machines. Vending machines may allow accurate inventory tracking without requiring human interaction, except to periodically restock a particular supply or group of supplies. In a preferred embodiment, vending machines may include security measures to prevent unauthorized supply distribution. Such security measures may include, but are not limited to, the use of an identification card and personal identification number ("PIN"), and biometric systems. Vending machines equipped with security systems may restrict access to specific supplies on an individual-by-individual level, or group-by-group basis. Vending machines may also be equipped with label printers that allow warnings and other information to be attached to a dispensed item's packaging.

Alternatively, supply closets or other storage areas can be outfitted with a Radio Frequency Identification (RFID) portal, as illustrated in FIG. 5. An RFID portal (Block **500**) is similar in structure to airport security metal detectors, except that RFID portals can detect or scan RFID tags as such tags pass through a portal. The present invention can monitor RFID tag identifiers, including identifiers assigned to individuals, such that access to a storage area can be monitored, and items removed by an individual can be tracked without any direct user interaction.

A preferred embodiment of the present invention can also track individual product dispensation, and may require additional information as products are dispensed. By way of example, without intending to limit the present invention, if a doctor dispenses sample medication to a patient, the present invention may also request a patient identifier, whereas if a package of gauze bandages was removed from inventory to restock an examination room, the present invention may not request a patient identifier. Patient identifiers can be used by the present invention to generate dispensation history reports for various products which may help suppliers and manufacturers to better understand income, race, ethnicity, or other demographic characteristics of typical recipients. The present invention may restrict such reports to only demographic information, and may not include individual-specific information in such reports.

An alternative embodiment of the present invention allows physicians or others to carry a handheld device through which prescriptions can be written while talking with a patient. Such a handheld device can connect to a local inventory management system through a wireless or wired means, and, when appropriate, a prescribed item sample may be automatically dispensed by a vending machine.

4

Alternatively, a message may be displayed at a nurse's station indicating the items to be pulled from inventory. When items are dispensed by a vending machine or pulled from inventory, inventory counts can be decremented as appropriate, and new orders can be placed as necessary.

As inventory is distributed, Customer Inventory System **130** may track supply usage habits to determine minimum acceptable quantities on-hand. Usage information may be studied for various periods of time, and the present invention may create an inventory usage model based on collected data. As models are created and refined, the present invention may modify minimum in-stock thresholds to reflect anticipated usage. As quantity in-stock approaches a calculated or specified threshold, Customer Inventory System **130** may automatically request new supplies from Server **100**. Supply requests may include various information, including, but not limited to, urgency of request, customer willingness to accept alternative brands or sizes, billing information, and shipping information.

As Server **100** receives supply requests, Server **100** may request price quotes from several Manufacturer, Supplier, or Distributor **120**'s ("Distributor **120**"). Distributor **120** may respond with quantity available, price, estimated delivery time, and other such information. Server **100** may then automatically evaluate each Distributor **120** response to find the best value given various factors associated with each customer request. When an appropriate Distributor **120** response is chosen, Server **100** may automatically arrange payment and shipping of requested supplies for Customer Inventory System **130**.

Communication between Customer Inventory System **130**, Server **100**, and Distributor **120** may be achieved through various methods, including, but not limited to, hypertext transfer protocol ("HTTP"), file transfer protocol ("FTP"), simple mail transfer protocol ("SMTP"), or other such related methods.

Although purchasing is a large part of inventory maintenance, a preferred embodiment of the present invention may also facilitate communication between customers, provide a source of information dissemination, and encourage customer interaction. The present invention may facilitate customer communication by allowing customers to resell products, equipment, or excess inventory to other businesses. The present invention may allow information dissemination by providing an up to date catalog of available equipment and other inventory from which a customer may order. The present invention may facilitate customer communication by allowing managers and customers to author and distribute articles describing new rules, regulations, procedures, revenue generation prospects, or other information of interest to other customers.

Customer Inventory System **130** may serve as the primary source of customer interaction with the present invention. Articles, catalogs, inventory information, and other such information may be stored on Server **100**, and Customer Inventory System **130** may communicate with Server **100** to obtain requested information.

FIG. 2 illustrates a preferred embodiment of Server **100**, in which relationships between data storage, web server, and application services provided by Server **100** are illustrated. All client communications may first pass through Firewall **210**. Firewall **210** represents a combination of software and hardware which is used to protect the data stored in Web Server **220**, Database Server **230**, and Application Server **240** from unauthorized access.

As previously described, clients may communicate with the present invention through various protocols, including

HTTP. Web Server **220** represents software capable of transmitting and receiving information via HTTP or other protocols. Examples of such software include Internet Information Server, developed by Microsoft Corporation of Redmond, Wash.; Enterprise Server, developed by Netscape Corporation of Mountain View, Calif.; and Apache Server, developed by the Apache Software Foundation of Forest Hill, Md.

When a client requests information, Web Server **220** may determine whether a client request requires pre-processing, in which case a request is transferred to Application Server **240**, or if a request simply requires data to fulfill the request, in which case Web Server **220** may communicate directly with Database Server **230**.

Database Server **230** represents commercially available database software, such as Microsoft SQL Server, developed by Microsoft Corporation of Redmond, Wash., Oracle 8i, developed by Oracle Corporation, of Redwood Shores, Calif., or other, similar software. Database Server **230** may store raw data, such as customer inventory information, customer addresses, vendor names, vendor product classes, and other such similar information. Such information may be transmitted to a client by Web Server **220**, or Application Server **240** may interpret information stored in Database Server **230** prior to transmission.

Application Server **240** may contain business rules associated with the present invention, which can be used to interpret Database Server **230** data prior to transmission of that data to a client. In addition to interpreting information stored in Database Server **230** for client use, Application Server **240** may also monitor inventory levels reflected in Database Server **230**, contact vendors based on information from Database Server **230**, adjust inventory information as new inventory is received, and provide the services necessary to facilitate business-to-business resale of equipment or products stored in Database Server **230**.

Web Server **220**, Database Server **230**, and Application Server **240** each represent software which may run on the same computer, or on multiple computers. In addition, Application Server **240** may be implemented within Database Server **230** as a set of business rules.

An alternative description of the present invention follows, in which the present invention is described through a series of functional specifications. This information is included for enablement purposes, and describes the best mode contemplated at the time the present specification was filed. While the following functional specification describes a preferred embodiment of the present invention, descriptions within the functional specification should not be construed as limiting the present invention.

To avoid confusion, the following terms are used in this functional specification:

Customer—Refers to a buyer of products via the present invention. Customers can have “open account” relationships to avoid credit card and COD shipment problems.

Linked Supplier—A distinction is made to avoid confusion with other vendors doing business with the present invention, given that payables may be in a common accounts payable system. Distributors, manufacturers, or other vendors (collectively “suppliers”), are distinguished by whether they are using the present invention’s inventory tracking and accounting software, and therefore have live Internet linkages into their databases for queries, order processing, and billing.

Manual Supplier—If a supplier provides goods or services through the present invention, but tracks inventory

through a manual interface, such a supplier may be termed a “Manual Supplier”. Open account relationships may be maintained between Linked or Manual Suppliers avoid payment complexities.

Non-linked Supplier—Suppliers not linked to the present invention.

Products—Items for sale via the present invention.

Customer Inventory—A list of products to be maintained at a given customer site.

In addition to the general definitions set forth above, this functions specification also defines a set of system functions. System functions may fall into one of the following general sub-system categories:

Interactive—human interface and related functions for tracking inventory counts, inventory consumption rates, ordering critical products, and the like. Interactive processes may be web-based or PC-based (client-server).

Nightly Processes—periodic processes through which orders can be generated and invoicing and related processes can be performed, including interaction with Distribution system at distributor warehouses.

Corporate—processes performed within corporate offices, but which update a database. Includes accounting, client data management, and other such processes.

Distribution—Linked Suppliers integrated with the present invention. Industry standard Enterprise Resource Planning (ERP) software may be bundled with commercial financial software to provide a complete business system to Linked Suppliers.

Database Design—A database schema which may be utilized in a preferred embodiment of the present invention.

The present invention in general, and this functional specification specifically, defines styles and functions included in detailed web pages and other user interface elements that are intended to be available system wide. Web pages, application windows, program screens, and transactions within the present invention should observe common rules. These rules include, but are not limited to:

No customer can view, inquiry into, update or in any way alter another customers data. Transactions can use an IP address or other unique identifier as a cross-check against a customer ID coming in with transmitted pages to insure rule enforcement. For such security procedures, customer IP addresses or other unique identifiers may only be changed through a function accessible only to Corporate staff.

No Linked Supplier can see data belonging to another linked supplier.

System parameters controlling customer options can be set through an account setup and editing process. Such a process may be accessed by only someone with an authorized identifier. Initially, such identifiers may only be given to Corporate Staff.

Data changes will generally be reflected by a transaction log or transaction history, which may be accessible to customers or distributors, and to which Corporate Staff with appropriate security levels may have access.

Functions involving data changes may be performed as server-side scripts, rather than through client-side logic. In general, such server-side scripts can utilize a logical flow similar to FIG. 3. As FIG. 3 illustrates, client software running on a customer machine may generate a page containing data to be updated by a web server and transmit said page to said web server (Block 300).

When a web server receives a page from a customer machine, the present invention may attempt to process any

changes requested by said page. If such changes are successful (Block 320), the present invention may return a confirmation page or cause a confirmation message to be displayed to a customer machine, and appropriate transaction logging may occur.

If changes are not successful, the present invention may increment a retry count by one (Block 340). If the retry count is less than or equal to three, the present invention may retransmit customer changes (Block 370) to Block 310 in an effort to make any appropriate changes. If the retry count exceeds three (Block 350), the present invention may cause a page containing any error codes or other feedback information to be displayed on a client machine. Such a page may also contain original client data changes as well as a means for resubmitting said changes (Block 360).

Client software may also periodically verify that a data connection exists between said client software and a server acting as part of the present invention. Such software may follow the logic illustrated in FIG. 4 to achieve accurate data connection monitoring. As Block 400 illustrates, client software may send one or more TCP/IP Ping commands or other network test commands to verify that a high-speed connection is still available to a server acting as part of the present invention.

If a high-speed network connection is detected, the present invention can continue normal operations (Block 410). If a high-speed network connection is not detected, the present invention may attempt to reestablish such a connection (Block 420). If a high-speed network connection can be reestablished (Block 430), the present invention may continue normal operations (Block 410). If a high-speed network connection cannot be established, a lower speed network connection, such as a dial-up network connection, may be established by the present invention (Block 440). If a lower speed network connection can be established, the present invention may continue normal operations, including periodically attempting to reestablish a high-speed network connection (Block 410).

If a lower speed network connection cannot be established, client software may display an application or page with alternative user interface and alternative functionality (Block 460). Such alternative functionality can include local storage of product usage information, local inventory tracking, and limited reordering via a dial-up or other temporary connection with a known supplier (Block 470). A client functioning without a data connection may periodically attempt to reestablish high or low speed network connections (Block 480). When a connection is reestablished (Block 490), a client may transmit product usage scan information to a server acting as part of the present invention.

In addition to an inventory tracking application, the present invention may also utilize a high speed network connection to transmit new product offerings or special promotions to a client for display to a customer. As new products are entered into a Products table or similar data structure, the present invention may cause such a product to appear on a client. In a preferred embodiment, the present invention may allow customers to select products in which a customer is interested, and the present invention may only display new products or special deals meeting a customer's prior specifications. Such specifications can include, but are not limited to, categories by manufacturer, product trade name, specific product type, general product classification, and quantity available or quantity per shipping unit.

A client displaying such information may allow a customer to indicate an interest in a product by typing a

command, clicking a button or other graphical interface element, or otherwise interacting with said client. If a customer expresses an interest in a featured product, a client may allow a customer to create a one-time order, or to configure recurring orders.

In addition to allowing customers to record product usage and order new inventory or new products, client software may also display advertisements on a rotating basis, and may be used for other purposes. A typical client software screen may also contain additional information and fields, including, but not limited to, a Product SKU field, a User-ID field, a Doctor-ID field, and a Sales Consultant Contact field.

When customers are not directly interacting with client software, client software may place a cursor in a Product SKU field by default. Placing a cursor in a Product SKU field can allow client software to ready accept an automatically or manually entered product identifier, such as a barcode label scanned via a wedge-style bar-code scanner.

As product identifiers are entered, client software may request a User-ID for each product identifier or set of product identifiers. A User-ID is a unique identifier created for each employee or set of employees within an organization. Such identifiers may be entered manually through an active user interface, such as, but not limited to, a keyboard, touch screen, or number pad, or through a passive user interface, such as, but not limited to, biometric recognition equipment, barcode identifiers worn by or associated with an employee, or through RFID tags worn by or associated with an employee. User-ID's may be combined with passwords to create a more secure inventory tracking system.

User-ID's may be used to track persons removing items from an inventory, but additional tracking or other controls may also be desirable. For example additional authorization may be required when employees remove expensive items or controlled substances from an inventory. The present invention may recognize when such an inventory item is removed, and client software may request an additional identifier, called a Doctor-ID, as authorization. Client software may even allow any user to enter a Doctor-ID for some inventory items, while for other inventory items a Doctor-ID and related password may be required. A biometric or other positive identifier may be used in place of a Doctor-ID or Doctor-ID and password in some applications.

When appropriate inventory tracking data has been entered into client software, the present invention may transmit such data to a server. A server may send a confirmation message to a client upon receipt of such data. If a confirmation message is not received within a predetermined period of time, the present invention may resend inventory tracking data. If successive resend attempts are unsuccessful, the present invention may follow a process similar to that illustrated by FIG. 3. Client software may allow additional inventory scans to occur while waiting for confirmation from a server.

In addition to recording inventory tracking information, client software may also allow a customer to access various options. Such options may include, but are not limited to, an administrative page, an inventory status inquiry page, and an inventory receipt page. An administrative page can allow authorized customers to create, edit, or remove User-ID's, Doctor-ID's, groups of such accounts, and account-specific information. An inventory status inquiry page can retrieve and display a page containing customer inventory records, order status, and other such information.

An inventory status inquiry may be initiated through client software, which can send a page containing customer-specific information, as well as site-specific identification

information stored on a client machine. In a preferred embodiment, a server receiving such a request may select records with appropriate site- and user-specific information from a table of customer inventory records. A server may generate a page or screen containing customer inventory information, including information from several tables. Table 1 below provides an example of columns displayed on a typical inventory request screen, as well as sample table and field names from which such data can be drawn.

TABLE 1

Column Heading	Source Table	Source Field
Description	PRODUCTS	DESCRIPTION
Product	CUSTOMER_INVENTORY	PRODUCT
Quantity In Stock	CUSTOMER_INVENTORY	ON_HAND_QTY
Order Point	CUSTOMER_INVENTORY	ROP

If a user has selected a descriptive search, a server may select records from a Products table, or other similar table, whose data matches or approximates descriptive text entered by a user. If a user has selected a parameter search, a server may select Product table records whose fields match or approximate user search requests. To expedite such selections, a server may index descriptions, manufacturers, product classes, product names, and other frequently searched fields.

When appropriate records are selected, a server may transmit such records to client software for display. Client software may present such records in a variety of formats, including, but not limited to, a columnar or tabular format. Table 2 lists sample column names, sample source table names, source field names, and additional functionality client software may present when displaying such records.

TABLE 2

Column Heading	Source Table	Source Field
Description	PRODUCTS	SHORT_DESCRIPTION
Product ID	PRODUCTS	PRODUCT_ID
Manufacturer	PRODUCTS	MANUFACTURER
Mfg Item No.	PRODUCTS	MANUFACTURER_ITEM_NUMBER
Prod. Type	PRODUCTS	PRODUCT_TYPE
Prod. Class	PRODUCTIONS	PRODUCT_CLASS
Check Availability	None	Window action field
Add to Stock Plan	None	Window action field

TABLE 1-continued

Column Heading	Source Table	Source Field
ReOrder Quantity	CUSTOMER_INVENTORY	ROQ
Activity Status	CUSTOMER_INVENTORY	STATUS

An advantage of the present invention over the prior art is the ability to simplify adding new items or restocking items into an inventory. Linked Suppliers shipping goods to a customer can provide a specially coded packing list, and a customer can automatically or manually enter such a code into client software. Client software can validate a packing list number as belonging to a customer and ensure a packing list is not credited to a customer system more than once. Entry of an invalid or previously validated packing slip can cause client software to display an error message.

If a valid packing slip is entered, client software may retrieve shipment contents from a centralized database or from a supplier database, and automatically update customer inventory information to reflect inventory received. Client software may then display a message confirming successful inventory changes, and return a customer to a main page.

A product search page may also be accessible through client software. A product search page can allow a user to select a search type and, if appropriate, search parameters and search parameter values (collectively "search criteria"). By way of example, without intending to limit the present invention, a product search page may allow a customer to search by specific manufacturer and products of a certain classification.

When a customer has selected appropriate search criteria, client software may pass such search criteria to a server. A server may query a database of products and product descriptions and return products matching or approximating customer search criteria.

As Table 2 indicates, client software can allow a customer to check product availability and add products to a stock plan. In a preferred embodiment, client software may make such functionality available for each record displayed. In an alternative embodiment, records may have check boxes or other selection controls, thereby allowing customers to check the availability of multiple items, and add multiple items to a stock plan.

When a customer checks availability of a product or products, the present invention may search Linked Supplier inventories to determine quantities available, physical location, anticipated delivery times, and the like. When inventory is available, client software may allow a customer to order a product.

When a customer chooses to add a product to an inventory or stocking plan, client software may request restocking and other parameters from a customer, then send appropriate information to a server. A server may add an appropriate entry to a Customer_Inventory or other similar table, thereby enabling inventory tracking through the present invention.

Client software can also allow a customer to request a telephone call, an E-mail, or other contact from a sales consultant. In a preferred embodiment, a customer may select a product or supplier, and client software can query a server to determine an appropriate sales consultant for the selected product or supplier. A user can then be presented with a dialog box or other interactive interface which asks a customer to confirm a contact request. Once a contact request has been confirmed, client software may cause a server to store a request message in a Contact_Log table or other similar table.

In a preferred embodiment, a server may periodically scan Contact_Log_table entries. When new or unanswered requests are found, a server may send a notification to a supplier alerting said supplier of such a request, where such a notification can include a customer E-mail address, tele-

phone number, fax number, or other contact information, as well as other relevant customer and product information.

While the present invention can monitor inventory use and automatically order new inventory when necessary, a customer may anticipate a need for additional inventory based on parameters outside the scope of the present invention. By way of example, without intending to limit the present invention, if the present invention is used in a hospital, and the Olympics was held in or near the city in which the hospital is located, a hospital administrator may foresee the need to order additional quantities of frequently used supplies. Client software can provide a customer with the ability to quickly place such orders.

Customers can initiate such an order by clicking a button or otherwise interacting with a graphical or physical interface. In a preferred embodiment, a customer may select from products or groups of products already included in an inventory or stocking plan, or a customer may search for products through an interface similar to that described earlier. As previously described, customers can designate standard restocking quantities, and client software may use such quantities as defaults when clients are requesting additional inventory. Client software may also present quantities on hand to help customers make smarter purchasing decisions. Based on such information, customers can modify order quantities before submitting an order.

Client software can transmit customer orders to a server. Upon receipt of a customer order, a server can initiate an order fulfillment process.

A server may also automatically place an order based on customer demand. A server may periodically scan a customer inventory table and monitor inventory usage. As inventory is depleted, a server can predict frequently used items, and order appropriate quantities. Initially, a server may order limited quantities, to limit customer costs. A server may increase order quantities for frequently ordered products as customer usage habits dictate. A server may also construct an historical usage characterization, so that seasonal or other periodic usage patterns can be automatically taken into account.

As orders are placed, a server can query Linked Supplier inventories to determine each supplier's ability to fulfill an order. A server can calculate shipping costs as each order is processed, and a server can select one or more suppliers who can most cost effectively meet customer needs. As qualified suppliers are identified, orders are placed which can include expedited delivery and other options as specified by a customer or as determined by a server.

A server can also post supplier invoices to an accounts payable system, generate customer invoices based on supplier invoices, post customer invoices to an accounts receivable system. A server may further integrate with an automated payment system, thereby limiting invoicing and other such expenses.

In addition to customer and order related functions, a server can also provide administrative functions. By way of example, without intending to limit the present invention, a user who is not a customer can register to be a customer through a server-provided interface. Such an interface may allow a user to specify a business name, business type,

executive director or general manager, physical address, mailing address, shipping address, one or more telephone numbers, employee names, employee licensing and accreditation information, and the like.

As users submit such information, a server may validate that an address, telephone number, and zip code are all valid with respect to each other, and that all necessary fields have been filled. If any validations fail, a server may present a data entry page along with any invalid data, thus simplifying data correction.

A server and client software may also allow customers and suppliers to change various information. By way of example, without intending to limit the present invention, suppliers can change pricing; add or remove vendors and products; add, edit, or remove contacts; view account status and open invoices; and perform other such functions. Customers can adjust inventory counts to reflect audit results; add, edit, or remove employees and employee information; update payment and contact information; view account balances and make payments; and perform other such functions.

Linked Suppliers can also take advantage of many of these same features. Linked Suppliers implementing the present invention can track inventory; provide real-time inventory information to prospective customers; accept electronic orders; generate pick/pack lists; track order fulfillment process, including tracking into which containers each item in an order has been placed; generate bar-coded packing lists and shipping labels for each container; and generate invoices.

The present invention also provides Linked Suppliers with other advantages over the prior art. By way of example, without intending to limit the present invention, Linked Supplier inventory needs can be forecast based on prior order history, prior lead times, safety stock quantities, and the like, thereby reducing overall inventory investment. The present invention can also allow enable a Linked Supplier to track processing and shipping status for various products within an order, thereby providing a higher level of customer service. The present invention may also allow managers or other authorized individuals to electronically sign a purchase order, invoice, or other billing or order document and electronically transmit such a document to an appropriate recipient.

To achieve the functionality set forth above, a preferred embodiment of the present invention includes the following table structure. The table structure described below is included for enablement and best mode purposes, and should not be construed as limiting the present invention.

Table Name—
CLIENT_CONTROL

Table Description and function—This table can reside locally on a customer computer. It can store one or more records containing control data needed to manage on and off-line functions remotely. These records can be updated via an update applet transferring data from the Web Server's SQL database to this control. Its purpose is to provide control over the processes running on the local machine even if it is off-line, and to enable it to reconnect automatically.

Column (field) Name	Description
CUSTOMER_ID	Customer ID - matches Customer ID in CUSTOMERS data in the Web Server SQL Database
IP_ADDRESS	This is the IP address for this machine
DSL_PORT	Connection path or port (e.g., COM2) where DSL connection exists; null if there is no DSL line for this machine

-continued

Column (field) Name	Description
DIAL_PORT	Connection path to port (e.g., COM3) where dial-up connection exists; null if there is no dial-up connection for this machine
DIAL_CONNECTION_PHONE	Phone number the software dials to establish a dial-up connection to the Web server system. Null if there is no dial-up connection
DIAL_CALL_BACK	Phone number of the dial-up line; to allow call-back from the web server.

Table Name—
CLIENT_ERROR_LOG

Table Description and function—This table contains an error generation history for processes originating on a customer machine. It can provide an audit trail and view of how well processes are functioning, and a place to record both fatal-error conditions and those that may not need to be displayed to customers. Its data may not be processed, but can be stored for review by system administrators and managers.

Table Name—SYSTEM_ERROR_LOG

Table Description and function—This table can contain a history of errors generated by processes originating from outside a customer machine. The table can provide an audit trail and view of how well processes are functioning, and provide a place to record both fatal and non-fatal errors. Such data can allow system administrators, programmers, and managers to monitor automated, unattended processes. SYSTEM_ERROR_LOG can use a data dictionary/field structure similar to a Client_Error_Log table.

Column (field) Name	Description	Field Characteristics & Indexing
ERROR_DATE	Date of error log entry	Index - concatenated with ERROR_TIME
ERROR_TIME	Time of error log entry	Index - with ERROR_DATE
CALLER	Program name generating the error log entry	
ERROR_MESSAGE	Error message generated by the caller program	
USER_VIEWABLE	Yes - if message also displayed on user seen page; No if internal only message	
DATA_DUMP	Data (if any) causing the error	

Column (field) Name	Description	Field Characteristics & Indexing
ERROR_DATE	Date of error log entry	Index - concatenated with ERROR_TIME
ERROR_TIME	Time of error log entry	Index - with ERROR_DATE
CALLER	Program name generating the error log entry	
ERROR_MESSAGE	Error message generated by the caller program	
USER_VIEWABLE	Yes - if message also displayed on user seen page; No if internal only message	
DATA_DUMP	Data (if any) causing the error	

Table Name—
SYS_PARAMETERS

Table Description and function—Stores system-wide parameters in a common table.

Column (field) Name	Description	Field Characteristics & Indexing	
PARAM_ID	Identifies parameter	Primary Index	5
VAR1	First variable		
VAR2	Second variable		
VAR3	Third variable		

Table Name—
CUSTOMER_APPLICATION
 Table Description and function—this table can have a data dictionary similar to the CUSTOMERS table, and can be used to temporarily store unapproved, unprocessed customer application data submitted by a Customer/Client Application page. When an application is processed, appropriate records can be deleted from this table.

Column (field) Name	Description	Field Characteristics & Indexing
See CUSTOMERS		

Table Name—
MEMBERS_APPLICATION
 Table Description and function—this table has may use a data dictionary similar to PRACTICE_MEMBERS, and can temporarily store unapproved, unprocessed customer application data submitted by a Customer/Client Application page. When an application is processed, appropriate records can be deleted from this table.

Column (field) Name	Description	Field Characteristics & Indexing
See PRACTICE_MEMBERS		

Table Name—
CUSTOMERS
 Table Description and function—Can store a unique identifier for each customer in a permanent table. Activity logged in CUSTOMER MAINT_HISTORY table. Can be linked to third-party applications for credit terms, bill to, ship to addresses, phones and other financial data.

Column (field) Name	Description	Comment	Field Characteristics & Indexing
CUSTOMER	Identifies customer	Unique identifier (account number); matches CUSTOMER in A/R system	Primary Index
NAME	Practice Business Name	See Practice Members for doctor data.	Index
SALES_CONSULTANT	Identifies sales consultant		Index

-continued

Column (field) Name	Description	Comment	Field Characteristics & Indexing
IPADDRESS1	assigned to account Internet address used to link, identify computers in customers office	Can have multiple computers in larger offices.	
IPADDRESS2	Internet address used to link, identify computers in customers office	Can have multiple computers in larger offices.	
IPADDRESS3	Internet address used to link, identify computers in customers office	Can have multiple computers in larger offices.	
IPADDRESS4	Internet address used to link, identify computers in customers office	Can have multiple computers in larger offices.	
DISCOUNT_CODE	Identifies which discount code is used to calculate prices charged for this customer	Code must be in DISCOUNT_CODES table.	Index
PHYSICAL_ADDRESS	Street address of practice		
PHYSICAL_STATE	State in which the practice is located		
PHYSICAL_ZIP	Zip code of physical location of practice		
SHIP_TO_ADDRESS	Address to which shipments go		
SHIP_TO_STATE	State for ship to address		
SHIP_TO_ZIP	Zip code for ship to address		
MAIL_ADDRESS	Mailing address (for other than shipments)	Literature, documents only (may be a PO Box to which UPS & FedEx cannot ship)	
MAIL_STATE	Mail address state		
MAIL_ZIP	Zip code for mail address		
ADMINISTRATOR	Administrator, manager, etc. of Customer		

50

Table Name—
PRACTICE_MEMBERS

Table Description and function—This table can be linked to records in a CUSTOMERS table, and can store data pertaining to individual physicians or other health-care professionals working at or with a practice.

Column (field) Name	Description	Comment	Field Characteristics & Indexing
CUSTOMER	Customer to whom the Practice Member is associated	Must be in CUSTOMERS table already	Index - concatenated with
MEMBER_NAME	Name of health-care professional	Together with CUSTOMER, forms	With CUSTOMER

-continued

Column (field) Name	Description	Comment	Field Characteristics & Indexing
	or physician linked to CUSTOMER	unique record key	
MEMBER_TITLE	Title (e.g., Exec. Director) of member		
MEMBER_MAIL_ADDRESS	Separate mailing address for member		
MEMBER_MAIL_STATE	Member mail address state		
MEMBER_MAIL_ZIP	Member mail address zip		
MEMBER_LICENSE_NO	Professional license for member		
MEMBER_LICENSE_EXPIRE	Expiration Date of member's professional license		
MEMBER_DEGREE1	First degree of member		
MEMBER_DEGREE2	Second degree of member		
MEMBER_DEGREE3	Third degree of member		
MEMBER_DEGREE4	Fourth degree of member		
MEMBER_NOTES	Text/comment field		
DATE_NEW	Date this member was added to table		
DATE_LAST	Last activity date		

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Table Name—
DISCOUNT_CODES
Table Description and function—can contain decimal values representing a unique price to be charged or discount to be granted to each customer. Any number of customers may use a discount code. When a decimal value associated with a given code is changed, the result is that all prices for all customers using that code are changed. If a customer's discount code specifies a discount value greater than allowed for a given product, the present invention may limit a price to the maximum discount.

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Table Name—
CUSTOMER_INVENTORY

Table Description and function—stores inventory at customer office. One record for each customer/SKU combination, including all that have been used in past, or which are to be used for next ordering cycle. Permanent table. Activity logged in CUSTOMER_INVENTORY_TX table.

Column (field) Name	Description	Comment	Field Characteristics & Indexing
DISC_CODE	Discount code	Identifies specific discount; numbering should be 10,20,30, etc. to allow for insertions in future, e.g, 14	Primary Index
DISC_VALUE	Decimal value for the discount to be given		
NOTES	Notes; text field for commentary about a particular discount code		

Column (field) Name	Description	Comment	Field Characteristics & Indexing
CUSTOMER	Identifies customer		Index - concatenated with PRODUCT
PRODUCT	Identifies product at customer's site		Indexed with CUSTOMER
ON_HAND_QTY	Quantity of an item on hand at this customer		
ROP	Reorder point quantity	When on_hand_qty falls to or below this quantity, a new order is triggered for the product.	
ROQ	Quantity to be ordered	Ordering process uses this quantity when a product is "triggered"	
STATUS	Activity status of item	Values: Active (default, normal setting) NoOrder (continue to use up inventory, but no more orders) NoUse (do not accept scanned usage of product)	Index

Table Name—
PRODUCTS 30 -
Table Description and function—identifies products available for sale at any point in time. Includes products no longer active. One record for each product/SKU/Item Number.

Column (field) Name	Description	Comment	Field Characteristics & Indexing
PRODUCT_ID	Identifies product; SKU; also is "item number"		Primary Index
SHORT_DESCRIPTION	Short description appearing on most printed outputs & screens		Index
LONG_DESCRIPTION	Long description for additional description		Index, built so each word is indexed separately.
MANUFACTURER	Company making product; Must be in MANUFACTURERS table		Index
MANUFACTURER_ITEM_NUMBER	Manufacturer's product identifier		Index
STATUS	Item status	Values: Active (default, normal usage) NoOrder (accept usage scans, no orders) NoUse (do not accept usage scans; no activity; obsolete or discontinued)	
PRODUCT_CLASS	Marketing/sales classification of product		Index
PRODUCT_GROUP	Commodity classification of product		Index

-continued

Column (field) Name	Description	Comment	Field Characteristics & Indexing
PRODUCT_LINE	Financial reporting classification of product		Index
SELL_START_DATE	Date that new orders for this product can be processed	Prior to this date orders will not be processed (new product so not available yet)	
SELL_END_DATE	Date after which new orders for this product cannot be processed	After or on this date, orders will not be processed (discontinued product)	
PRODUCT_PICTURE	Product Picture bit map image	JPEG or GIF	

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Table Name—

MANUFACTURERS

Table Description and function—This table stores all manufacturers whose products may be carried in the PRODUCTS table. It serves as a reference and validation table for products.

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-continued

Column (field) Name	Description	Comment	Field Characteristics & Indexing
DATE_ADDED	Date this Manufacturer was added to the table		

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Column (field) Name	Description	Comment	Field Characteristics & Indexing
MANUFACTURER_ID	Short abbreviation for manufacturer		Primary Index
MANUFACTURER_NAME	Normal business name for manufacturer		Indexed

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Table Name—

ORDERS

Table Description and function—stores orders generated by nightly process and/or by critical ordering process, which are then downloaded to distributor. Serves as order “header” record. Linked to ORDER_DETAIL table where line items are stored. No maintenance history log table. One record for each order generated and downloaded.

Column (field) Name	Description	Comment	Field Characteristics & Indexing
ORDER_NO	Order Number; unique identifier for the order	Generated by ordering processes; increments SYSTEM_PARAMETER for order number	Primary Index
ORDER_DATE	Date order generated		Index
ORDER_TIME	Time order generated		
ORDER_SOURCE	How order was generated	Sources are: AUTO - nightly process MANUAL - manual order entered on terminal in customer's office.	
CUSTOMER	Customer on the order		Index
LINKED_SUPPLIER	Linked Supplier to whom the order was downloaded		Index
ORDER_STATUS	Status of the order; shows latest status only, sequence is presumed	Values: GEN - generated PLACED - downloaded to supplier	Index

-continued

Column (field) Name	Description	Comment	Field Characteristics & Indexing
		S_BILLED - supplier has invoiced Med-e-Track C_BILLED- system has converted supplier invoice to customer invoices	
STATUS_DATE	Date which status changed		
SHIP_TO_ADDRESS	Address to which orders is to be shipped; appears on downloaded order data		
ORDER_PRODUCT_TOTAL	Total value of order for product only; not including tax, shipping, other charges		

Table Name—

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ORDER_DETAIL

Table Description and function—stores line item detail on ORDERS. One record for each line item on an order.

Column (field) Name	Description	Comment	Field Characteristics & Indexing
ORDER_DTL_ORDER_NO	Order number to which this detail record belongs		Index - concatenated with ORDER_LINE_NUMBER
ORDER_LINE_NUMBER	Line number for order.	With Order_Dtl_Order_no, forms a unique identifier	
PRODUCT	Product identifier for item ordered		Index
ORDER_QUANTITY	Quantity of the product that is being ordered.		
SHIP_QUANTITY	Quantity of the item shipped; as reflected on an uploaded, processed supplier invoice/packlist		
CUSTOMER_UNIT_PRICE	Price to be charged to customer		
CUSTOMER_UNI_SALES_TAX	Sales tax, if any to be charged customer		
PRODUCT_ORDERED_SUBTOTAL	Value = Order_Quantity * Customer_Unit_price		
PRODUCT_SHIP_SUBTOTAL	Value = Ship_Quantity * Customer_Unit_Price		
LINKED_SUPPLIER_UNIT_COST	Price to be paid Linked Supplier for this item		

-continued

Column (field) Name	Description	Comment	Field Characteristics & Indexing
LINKED_SUPPLIER_	Value =		
PRODUCT_SHIP_SUBTOTAL	Ship Quantity * Linked_Supplier_ Unit_cost		

Table Name—

LINKED_SUPPLIER

Table Description and function—Stores and sets up each linked supplier, i.e., distributor that is linked into the web site. One record for each supplier that will be, is now, or has been linked at one time into Med-e-Track. Activity logged in LINKED_SUPPLIER_MAINT_HISTORY. Account is linked to Supplier table in the SOLOMAN Accounts Payable subsystem.

Column (field) Name	Description	Comment
SUPPLIER	Supplier's ID	Unique identifier
SUPPLIER_IP_ADDRESS	IP Address where linking process occurs	
OPEN_DATE	Date the relationship was setup/started	

Table Name—INVOICE

SUPPLIER_

15 Table Description and function—stores uploaded invoice/pack lists from linked suppliers. Serves as “header” record for invoices. A given Order can have multiple invoices. Linked to SUPPLIER_INVOICE_DETAIL records which carry line item detail. Invoices uploaded from distributor reflect orders they have shipped and are then used to generate Customer invoices. The uploaded invoice data is also transferred to the Accounts Payable module of the Solomon IV software for corporate accounting/tracking.

20 Customer invoices generated and recorded in this table are also transferred to the Accounts Receivable module.

Column (field) Name	Description	Comment	Field Characteristics & Indexing
INTERNAL_INVOICE_ID	Internal, system generated invoice identifier	Insures unique invoice identification in case of similar supplier invoicing schemes/numbers	
ORDER	Order number which the invoice is a shipment/bill for.		
SUPPLIER_INVOICE	Invoice identifier from supplier	Uploaded invoice data	
SUPPLIER_INVOICE_DATE	Date of/on supplier invoice that was uploaded		
SUPPLIER_INVOICE_TIME	Time that supplier invoice was uploaded	Invoice time may not appear in supplier database.	
AP_DATE	Date supplier invoice data posted to AP tables		
AP_TIME	Time supplier invoice data was posted to AP tables		
CUSTOMER_INVOICE	Invoice ID generated by nightly process to bill customer for shipment	Presence indicates that nightly process has run, generating this separate invoice number.	
CUSTOMER_INVOICE_DATE	Date customer invoice generated by nightly process		
CUSTOMER_INVOICE_TIME	Time of customer invoice generation process.		
AR_DATE	Time		

-continued

Column (field) Name	Description	Comment	Field Characteristics & Indexing
SHIPMENT	Shipment document number	May be separate ID from invoice no.	Index on this field for packing slip data retrieval.
SHIP_VIA	Shipping method; e.g., UPS Ground		

Table Name—
INTERNAL_INVOICE_SHIP_DETAIL

Table Description and function—This table contains shipment information for the shipment covered by the Internal Invoice. There is one record for each carton comprising the shipment covered by the Invoice. It is linked to the Internal Invoice table.

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Column (field) Name	Comment
INTERNAL_INVOICE_ID SHIP_CARTON_ID	Together with invoice id, comprises unique record ID
TRACKER_NO	

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Table Name—
SUPPLIER_INVOICE_DETAIL

Table Description and function—this table carries the line item level detail for invoices uploaded from the linked supplier/distributor. Some line item level detail is used to update Order data to support quick order status inquiries and track back-ordered items.

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Column (field) Name	Description	Comment
INTERNAL_INVOICE_ID	Identifier for internal invoice no	
INTERNAL_INVOICE_LINE_NUMBER	Line number for internal invoice	Together with Internal Invoice identifier, forms unique key
SHIPPED_PRODUCT	Product shipped	
SHIP_QUANTITY	Quantity shipped	
UNIT_PRICE	Supplier's Unit price	
UNIT_TAX	Sales Tax (if any)	
EXTENDED_PRICE	Value = Ship_qty * Unit_Price	Product only subtotal
LINE_TAX_TOTAL	Value = Ship_Qty * Unit_Tax	
LINE_TOTAL_AMOUNT	EXTENDED_PRICE + Line_Tax_total	

Table Name—
SUPPLIER_COST

Table Description and function—Stores prices to be paid to each Linked Supplier in the system. One record for each linked supplier and SKU. Permanent table. Activity logged in SUPPLIER_COST_MAINT_HISTORY table.

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Column (field) Name	Description	Comment	Field Characteristics & Indexing
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Table Name—
SUPPLIER_COST_MAINT_HISTORY

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Table Description and function—records changes made to SUPPLIER_COST records. One record for each field changed during an update of a given record.

Column (field) Name	Description	Comment	Field Characteristics & Indexing
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Table Name—
PRODUCT_MAINT_HISTORY

Table Description and function—records changes made to PRODUCTS table. One record for each field changed during an update of a given record.

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Column (field) Name	Description	Comment	Field Characteristics & Indexing
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Table Name—
PRODUCT_CLASS

Table Description and function—Identifies valid product classes; serves as a reference table.

Column (field) Name	Description
PROD_CLASS_CODE	Code for product class description
DESCRIPTION	Text/descriptive name for product_class code

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Table Name—
PRODUCT_GROUP

Table Description and function—Identifies valid product groups; serves as a reference table.

Column (field) Name	Description
PRODUCT_GROUP_CODE DESCRIPTION	Code for product group description Text/descriptive name for Product Group Code.

Table Name—
PRODUCT_LINE
Table Description and function—Identifies valid product lines; serves as a reference table.

Column (field) Name	Description
PRODUCT_LINE_CODE DESCRIPTION	Code for product line description Text/descriptive name for product line code

Table Name—
CUSTOMER_INVENTORY_TRANSACTIONS
Table Description and function—transaction history table for activity altering data in Customer_Inventory table; one record for each change recorded; main use will be recording inventory activity, although transactions will be generated for changes to status, ROP, ROQ and Notes values, i.e., non-on-hand quantity values. Each transaction affects only one data field. Transaction code indicates what update/change activity was performed, and therefore which data field was updated.

Column (field) Name	Description	Comment
TRAN_NO	Unique identifier for each transaction; non significant	Functions like a check number.
TRAN_DATE	Date transaction processed	
TRAN_TIME	Time transaction processed	
TRAN_ID	Code identifying transaction	Values: TBD
PRODUCT	Product identifier of item affected	
QTY		
CUSTOMER	Customer whose inventory data was updated/changed	
USER_ID	User performing transaction	
BEFORE_VALUE	Value of data field prior to update action.	
AFTER_VALUE	Value of data field after update action	

Table Name—
CONTACT_LOG
Table Description and function—this table accepts transactions from the consultant request function, enters and tracks them for followup and management purposes.

Column (field) Name	Description
SALES_CONSULTANT_ID	ID in Sales_Consultants table.
REQUEST_DATE	Date customer initiated request
REQUEST_TIME	Time customer initiated request

Table Name—
CUSTOMER_USERS
Table Description and function—This table stores information about each user at a customer's site. There are two

classes of users, supervisor and staff. Only a user with supervisor rights can add new users. The web page “hard-wires” who the customer is so customer users are kept associated with the correct customer.

Column (field) Name	Description	Comment	Field Characteristics & Indexing
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Table Name—SALES_CONSULTANTS
Table Description and function—This table stores data about each Sales Consultant. It is essentially a reference table.

Column (field) Name	Description
SALES_CONSULTANT_ID	Unique identifier * record key
CONSULTANT_SHORT_NAME	Short name, nickname, initials to be used on screens, reports
CONSULTANT_FULL_FIRST_NAME	First name of consultant
CONSULTANT_LAST_NAME	Last name of consultant

It should be obvious to one skilled in the art that the present invention allows inventory tracking and management through a combination of manual, semi-automated, and automated means. The present invention also allows a manager to purchase in bulk and take advantage of promotions and other special offerings, thus reducing inventory costs. In addition, the present invention reduces the amount of inventory which must be kept on-hand by accurately modeling and predicting inventory needs. The present invention further provides customers with the ability to review new equipment, communicate with each other, and buy and sell excess inventory, refurbished equipment, and the like.

While the preferred embodiment and various alternative embodiments of the present invention have been disclosed and described in detail herein, it may be apparent to those skilled in the art that various changes in form and detail may be made therein without departing from the spirit and scope thereof, including applying the present invention to fields other than healthcare.

What is claimed is:
1. An inventory management system, comprising the following elements, operably connected:

- (a) at least one computer having at least one storage medium;
- (b) one or more databases residing on said at least one storage medium, in which at least the following data is stored:
 - (1) customer inventory information,
 - (2) inventory and cost information for a plurality of manufacturers, suppliers, or distributors
 - (3) inventory restocking parameters provided by said customer; and
- (c) client software residing on said at least one storage medium providing an interface to said one or more database(s), wherein the client software identifies users and allows users to be classified into groups, and wherein permissions or roles are assigned to such groups, and wherein:
 - (i) said software evaluates said customer inventory information and inventory or cost information for a plurality of manufacturers, suppliers, or distributors

in light of said restocking parameters provided by said customer,

(ii) said software automatically orders manufacturer, supplier, or distributor inventory which best fulfills said inventory restocking parameters provided by said customer in light of said evaluation,

(iii) said software tracks inventory items in said databases for (1) said customer and (2) said manufacturer, supplier, or distributor, as inventory items are added to, restocked to, or removed from said inventories,

wherein said tracking is executed by detecting an RFID tag associated with each said inventory item,

(iv) said software updates said data on said one or more databases through at least one software interface to said databases; and

(v) said software provides an interface through which said customer, manufacturer, supplier, or distributor can access the information in said one or more databases according to said assigned permissions or roles.

2. The inventory management system of claim 1, wherein said client software additionally forecasts the inventory needs of said customer, manufacturer, supplier, or distributor based on inventory usage, or inventory availability trends, or both,

wherein said evaluation of customer inventory information and manufacturer, supplier, or distributor inventory and cost information is executed in light of said restocking parameters provided by said customer and said forecast inventory needs.

3. The inventory management system of claim 1, wherein said client software monitors inventory levels and reports anticipated shortages.

4. The inventory management system of claim 1, wherein said client software monitors inventory levels and generates orders to cover anticipated shortages.

5. The inventory management system of claim 1, wherein said client software allows users to order new inventory items or to supplement inventory when desired.

6. The inventory management system of claim 1, wherein said customer inventory information is collected and stored for multiple customer business sites or for multiple customers, and wherein inventory restocking parameters provided by said customer are collected and stored for each said customer.

7. The inventory management system of claim 1, wherein said inventory and cost information is collected and stored for multiple manufacturers, suppliers, or distributors.

8. The inventory management system of claim 1, wherein said step of updating takes place in real time.

9. The inventory management system of claim 1, wherein said detecting of an RFID tag associated with each said inventory item is executed by one or more REID readers.

10. The inventory management system of claim 1, wherein said REID tag is read by a hand held electronic device.

11. The inventory management system of claim 1, wherein said RFID tag is read by an electronic portal device.

12. The inventory management system of claim 1, wherein said client software permits registration and removal of individual users, and modification of user information.

13. The inventory management system of claim 1, wherein said client software allows inventory items to be grouped, allows restrictions to be placed on distribution of such inventory items, permits recording of information

when an inventory item belonging to a group is dispensed, and allows printing of inventory item specific information for inclusion with each inventory item removed from inventory.

14. The inventory management system of claim 1, wherein said client software allows users to specify a price for goods for sale within an inventory.

15. The inventory management system of claim 1, wherein a user of the computer program is identified via an optical reader which can read specially coded information on a person.

16. The inventory management system of claim 1, wherein a user of the computer program is identified via an electronic device for scanning wirelessly accessible identifiers associated with a person.

17. The inventory management system of claim 1, wherein a user of the computer program is identified via a biometric identification device.

18. The inventory management system of claim 1, wherein said client software provides an interface through which inventory item identity information can be entered in an automated manner.

19. A method for inventory management, comprising the steps of:

- (a) collecting and storing, on one or more databases having client software, at least the following data:
 - (1) customer inventory information
 - (2) inventory and cost information for a plurality of manufacturers, suppliers, or distributors, and
 - (3) inventory restocking parameters provided by said customer;
- (b) evaluating via at least one computer said customer inventory information and inventory or cost information for a plurality of manufacturers, suppliers, or distributors inventory or cost information for a plurality of users selected from the group consisting of customers, manufacturers, suppliers, and distributors in light of said restocking parameters provided by said customer;
- (c) ordering manufacturer, supplier, or distributor inventory which best fulfills said inventory restocking parameters provided by said customer;
- (d) tracking inventory items in said databases for (1) said customer and (2) said manufacturer, supplier, or distributor, as inventory items are added to, restocked to, or removed from said inventories,

wherein said tracking step is executed by detecting an RFID tag associated with each said inventory item;

- (e) updating said data on said one or more databases, using information obtained in said inventory tracking step, through at least one software interface to said databases; and
- (f) providing access via client software to information in said one or more databases to each said customer, manufacturer, supplier, or distributor,

wherein said client software allows one or more customers, manufacturers, suppliers, or distributors to be classified into groups, and where permissions or roles are assigned to such groups.

20. The method of claim 19, comprising the additional step of forecasting the inventory needs of customers, manufacturers, suppliers, or distributors based on inventory usage or inventory availability trends,

wherein said step of evaluating said customer inventory information and said manufacturer, supplier, or dis-

35

tributor inventory and cost information is executed in light of said restocking parameters provided by said customer and said forecast inventory needs.

21. The method of claim 19, wherein said step of ordering is completed automatically based upon the evaluation of said customer inventory information and said manufacturer, supplier, or distributor inventory and cost information, in light of said restocking parameters provided by said customer.

22. The method of claim 19, wherein said method comprises the additional step of forecasting inventory usage or inventory availability for each said customer, manufacturer, supplier, and distributor, based upon said customer, manufacturer, supplier, or distributor information.

23. The method of claim 19, wherein said client software monitors inventory levels and reports anticipated shortages.

24. The method of claim 19, wherein said client software monitors inventory levels and generates orders to cover anticipated shortages.

25. The method of claim 19, wherein said client software allows users to order Previously presented inventory items or to supplement inventory when desired.

26. The method of claim 19, wherein said customer inventory information is collected and stored for multiple customer business sites or for multiple customers, and wherein inventory restocking parameters provided by said customer are collected and stored for each said customer.

27. The method of claim 19, wherein said inventory and cost information is collected and stored for multiple manufacturers, suppliers, or distributors.

28. The method of claim 19, wherein said step of updating takes place in real time.

29. The method of claim 19, wherein said RFID tag is read by a hand held electronic device.

30. The method of claim 19, wherein said RFID tag is read by an electronic portal device.

31. The method of claim 19, comprising the additional step of providing a software interface through which inventory item identity information can be entered in an automated manner.

32. A computer program product for managing customer inventory, comprising program instructions stored on at least one computer readable storage medium which when executed causes a computer to:

(a) access from one or more databases, at least the following stored data:

- (1) customer inventory information,
- (2) inventory and cost information for a plurality of manufacturers, suppliers, or distributors, and
- (3) inventory restocking parameters provided by said customer;

(b) evaluate said customer inventory information and inventory or cost information for a plurality of manufacturers, suppliers, or distributors in light of said restocking parameters provided by said customer;

(c) order manufacturer, supplier, or distributor inventory which best fulfills said inventory restocking parameters provided by each said customer;

(d) track inventory items for (1) each customer and (2) each manufacturer, supplier, or distributor, as inventory items are added to, restocked to, or removed from inventory,

wherein said tracking step is executed by detecting an RFID tag associated with each said inventory item and by updating said databases through at least one software interface to said databases;

36

(e) update said data on said one or more databases; and
(f) provide access to the information in said one or more databases to said customer, manufacturer, supplier, or distributor,

wherein said computer program product allows customers, manufacturers, suppliers, or distributors to be classified into groups, and where permissions or roles are assigned to such groups.

33. The computer program product of claim 32, further comprising program instructions for allowing the forecasting of inventory needs of said customer, manufacturer supplier, or distributor based on inventory usage or inventory availability trends,

wherein said evaluation of customer inventory information and manufacturer, supplier, or distributor inventory and cost information is executed in light of said restocking parameters provided by said customer and said forecast inventory needs.

34. The computer program product of claim 32, further comprising program instructions for:

- (1) monitoring inventory levels; and
- (2) reporting anticipated shortages.

35. The computer program product of claim 32, further comprising program instructions for:

- (1) monitoring inventory levels; and
- (2) generating orders to cover anticipated shortages.

36. The computer program product of claim 32, further comprising program instructions for allowing users to order Previously presented inventory items or to supplement inventory when desired.

37. The computer program product of claim 32, further comprising program instructions wherein said step of ordering is completed automatically based upon the evaluation of said customer inventory information and said manufacturer, supplier, or distributor inventory and cost information in light of said restocking parameters provided by said customer.

38. The computer program product of claim 32, further comprising program instructions for allowing said step of updating to take place in real time.

39. The computer program product of claim 32, further comprising program instructions for permitting access to the information in said one or more databases, according to said assigned roles or permissions, to a user of the computer program identified via an optical reader which can read specially coded information on a person.

40. The computer program product of claim 32, further comprising program instructions for permitting access to the information in said one or more databases, according to said assigned roles or permissions, to a user of the computer program identified via an electronic device for scanning wirelessly accessible identifiers associated with a person.

41. The computer program product of claim 32, further comprising program instructions for permitting access to the information in said one or more databases, according to said assigned roles or permissions, to a user of the computer program identified via a biometric identification device.

42. The computer program product of claim 32, further comprising program instructions for enabling registration and removal of individual users of the computer program product and modification of user information.

43. The computer program product of claim 32, further comprising program instructions for performing administrative functions.

37

44. The computer program product of claim 32, further comprising program instructions for:

- (1) allowing inventory items to be grouped into classifications;
- (2) allowing restrictions to be placed on distribution of such inventory items;
- (3) permitting recording of information when individual inventory items or inventory items belonging to a particular group or set of groups are added to, restocked to, or removed from inventory; and
- (4) allowing printing of inventory item specific or group specific labels or information to be included with each inventory item removed from inventory.

45. The computer program product of claim 32, further comprising program instructions for allowing users to specify a price for goods for sale within an inventory.

46. The computer program product of claim 32, further comprising program instructions for allowing detection of an RFID tag associated with each said inventory item to be executed by one or more RFID readers.

47. The computer program product of claim 32, further comprising program instructions for allowing said RFID tag to be read by a hand held electronic device.

48. The computer program product of claim 32, further comprising program instructions for allowing said RFID tag to be read by an electronic portal device.

49. The method of claim 19, comprising the additional step of identifying specially coded information on an object or a person via an optical reader.

50. The method of claim 19, comprising the additional step of identifying a wirelessly accessible identifier associated with an object or a person via an electronic device for scanning wirelessly accessible identifiers.

51. The method of claim 19, comprising the additional step of identifying a user of the computer program via a biometric identification device.

52. An inventory management system, comprising the following elements, operably connected:

- (a) at least one computer having at least one storage medium;
- (b) one or more databases residing on said at least one storage medium, in which at least the following data is stored:
 - (1) customer inventory information,
 - (2) inventory and cost information for a plurality of manufacturers, suppliers, or distributors, and
 - (3) inventory restocking parameters provided by said customer; and
- (c) client software residing on said at least one storage medium providing an interface to said one or more database(s), wherein the client software identifies users and allows users to be classified into groups, and wherein permissions or roles are assigned to such groups, and wherein:
 - (i) said software evaluates said customer inventory information and inventory or cost information for a plurality of manufacturers, suppliers, or distributors in light of said restocking parameters provided by said customer,
 - (ii) said software automatically orders manufacturer, supplier, or distributor inventory which best fulfills said inventory restocking parameters provided by said customer in light of said evaluation,
 - (iii) said software tracks inventory items in said databases for (1) said customer and (2) said

38

manufacturer, supplier, or distributor, as inventory items are added to, restocked to, or removed from said inventories,

- (iv) said software updates said data on said one or more databases through at least one software interface to said databases; and
- (v) said software provides an interface through which said customer, manufacturer, supplier, or distributor can access the information in said one or more databases according to said assigned permissions or roles.

53. The inventory management system of claim 52, wherein said client software additionally forecasts the inventory needs of said customer, manufacturer, supplier, or distributor based on inventory usage, or inventory availability trends, or both,

wherein said evaluation of customer inventory information and manufacturer, supplier, or distributor inventory and cost information is executed in light of said restocking parameters provided by said customer and said forecast inventory needs.

54. The inventory management system of claim 52, wherein said client software monitors inventory levels and reports anticipated shortages.

55. The inventory management system of claim 52, wherein said client software monitors inventory levels and generates orders to cover anticipated shortages.

56. The inventory management system of claim 52, wherein said client software allows users to order new inventory items or to supplement inventory when desired.

57. The inventory management system of claim 52, wherein said customer inventory information is collected and stored for multiple customer business sites or for multiple customers, and wherein inventory restocking parameters provided by said customer are collected and stored for each said customer.

58. The inventory management system of claim 52, wherein said inventory and cost information is collected and stored for multiple manufacturers, suppliers, or distributors.

59. The inventory management system of claim 52, wherein said step of updating takes place in real time.

60. The inventory management system of claim 52, wherein said client software permits registration and removal of individual users, and modification of user information.

61. The inventory management system of claim 52, wherein said client software allows inventory items to be grouped, allows restrictions to be placed on distribution of such inventory items, permits recording of information when an inventory item belonging to a group is dispensed, and allows printing of inventory item specific information for inclusion with each inventory item removed from inventory.

62. The inventory management system of claim 52, wherein said client software allows users to specify a price for goods for sale within an inventory.

63. The inventory management system of claim 52, wherein specially coded information on an object or a person is identified via an optical reader.

64. The inventory management system of claim 52, wherein a wirelessly accessible identifier associated with an object or a person is identified via an electronic device for scanning wirelessly accessible identifiers.

65. The inventory management system of claim 52, wherein a user of the computer program is identified via a biometric identification device.

66. The inventory management system of claim 52, wherein said client software provides an interface through

which inventory item identity information can be entered in an automated manner.

67. A method for inventory management, comprising the steps of:

(a) collecting and storing, on one or more databases having client software, at least the following data:

- (1) customer inventory information,
- (2) inventory and cost information for a plurality of manufacturers, suppliers, or distributors, and
- (3) inventory restocking parameters provided by said customer;

(b) evaluating via at least one computer said customer inventory information and inventory or cost information for a plurality of manufacturers, suppliers, or distributors in light of said restocking parameters provided by said customer;

(c) ordering manufacturer, supplier, or distributor inventory which best fulfills said inventory restocking parameters provided by said customer;

(d) tracking inventory items in said databases for (1) said customer and (2) said manufacturer, supplier, or distributor, as inventory items are added to, restocked to, or removed from said inventories;

(e) updating said data on said one or more databases, using information obtained in said inventory tracking step, through at least one software interface to said databases; and

(f) providing access via client software to information in said one or more databases to each said customer, manufacturer, supplier, or distributor,

wherein said client software allows one or more customers, manufacturers, suppliers, or distributors to be classified into groups, and where permissions or roles are assigned to such groups.

68. The method of claim 67, comprising the additional step of forecasting the inventory needs of customers, manufacturers, suppliers, or distributors based on inventory usage or inventory availability trends,

wherein said step of evaluating said customer inventory information and said manufacturer, supplier, or distributor inventory and cost information is executed in light of said restocking parameters provided by said customer and said forecast inventory needs.

69. The method of claim 67, wherein said step of ordering is completed automatically based upon the evaluation of said customer inventory information and said manufacturer, supplier, or distributor inventory and cost information, in light of said restocking parameters provided by said customer.

70. The method of claim 67, wherein said method comprises the additional step of forecasting inventory usage or inventory availability for each said customer, manufacturer, supplier, and distributor, based upon said customer, manufacturer, supplier, or distributor information.

71. The method of claim 67, wherein said client software monitors inventory levels and reports anticipated shortages.

72. The method of claim 67, wherein said client software monitors inventory levels and generates orders to cover anticipated shortages.

73. The method of claim 67, wherein said client software allows users to order new inventory items or to supplement inventory when desired.

74. The method of claim 67, wherein said customer information is collected and stored for multiple customer business sites or for multiple customers, and

wherein inventory restocking parameters provided by said customer are collected and stored for each said customer.

75. The method of claim 67, wherein said inventory and cost information is collected and stored for multiple manufacturers, suppliers, or distributors.

76. The method of claim 67, wherein said step updating takes place in real time.

77. The method of claim 67, comprising the additional step of providing a software interface through which inventory item identity information can be entered in an automated manner.

78. The method of claim 67, comprising the additional step of identifying specially coded information on an object or a person via an optical reader.

79. The method of claim 67, comprising the additional step of identifying a wirelessly accessible identifier associated with an object or a person via an electronic device for scanning wirelessly accessible identifiers.

80. The method of claim 67, comprising the additional step of identifying a user of the computer program via a biometric identification device.

81. A computer program product for managing customer inventory, comprising program instructions stored on at least one computer readable storage medium which when executed cause a computer to:

(a) access, from one or more databases, at least the following stored data:

- (1) customer inventory information,
- (2) inventory and cost information for a plurality of manufacturers, suppliers, or distributors, and
- (3) inventory restocking parameters provided by said customer;

(b) evaluate said customer inventory information and inventory or cost information for a plurality of manufacturers, suppliers, or distributors in light of said restocking parameters provided by said customer;

(c) order manufacturer, supplier, or distributor inventory which best fulfills said inventory restocking parameters provided by each said customer;

(d) track inventory items for (1) each customer and (2) each manufacturer, supplier, or distributor, as inventory items are added to, restocked to, or removed from inventory,

wherein said tracking step is executed by detecting each said inventory item and by updating said databases through at least one software interface to said databases;

(e) update said data on said one or more databases; and

(f) provide access to the information in said one or more databases to said customer, manufacturer, supplier, or distributor,

wherein said computer program product allows customers, manufacturers, suppliers, or distributors to be classified into groups, and where permissions or roles are assigned to such groups.

82. The computer program product of claim 81, further comprising program instructions for allowing the forecasting of inventory needs of said customer, manufacturer, supplier, or distributor based on inventory usage or inventory availability trends,

wherein said evaluation of customer inventory information and manufacturer, supplier, or distributor inventory and cost information is executed in light of said restocking parameters provided by said customer and said forecast inventory needs.

83. The computer program product of claim 81, further comprising program instructions for:

- (1) monitoring inventory levels; and
- (2) reporting anticipated shortages.

84. The computer program product of claim 81, further comprising program instructions for:

- (1) monitoring inventory levels; and
- (2) generating orders to cover anticipated shortages.

85. The computer program product of claim 81, further comprising program instructions for allowing users to order new inventory items or to supplement inventory when desired.

86. The computer program product of claim 81, further comprising program instructions wherein said step of ordering is completed automatically based upon the evaluation of said customer inventory information and said manufacturer, supplier, or distributor inventory and cost information in light of said restocking parameters provided by said customer.

87. The computer program product of claim 81, further comprising program instructions for allowing said step of updating to take place in real time.

88. The computer program product of claim 81, further comprising program instructions for identifying specially coded information on an object or a person via an optical reader.

89. The computer program product of claim 81, further comprising program instructions for identifying a wirelessly accessible identifier associated with an object or a person, via an electronic device for scanning wirelessly accessible identifiers.

90. The computer program product of claim 81, further comprising program instructions for identifying a user of the computer program via a biometric identification device.

91. The computer program product of claim 81, further comprising program instructions for permitting access to the

information in said one or more databases, according to said assigned roles or permissions, to a user of the computer program identified via an electronic device for scanning wirelessly accessible identifiers associated with a person.

92. The computer program product of claim 81, further comprising program instructions for permitting access to the information in said one or more databases, according to said assigned roles or permissions, to a user of the computer program identified via a biometric identification device.

93. The computer program product of claim 81, further comprising program instructions for enabling registration and removal of individual users of the computer program product and modification of user information.

94. The computer program product of claim 81, further comprising program instructions for performing administrative functions.

95. The computer program product of claim 81, further comprising program instructions for:

- (1) allowing inventory items to be grouped into classifications;
- (2) allowing restrictions to be placed on distribution of such inventory items;
- (3) permitting recording of information when individual inventory items or inventory items belonging to a particular group or set of groups are added to, restocked to, or removed from inventory; and
- (4) allowing printing of inventory item specific or group specific labels or information to be included with each inventory item removed from inventory.

96. The computer program product of claim 81, further comprising program instructions for allowing users to specify a price for goods for sale within an inventory.

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