UNITED STATES PATENT AND TRADEMARK OFFICE
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BEFORE THE PATENT TRIAL AND APPEAL BOARD
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SAP AMERICA, INC.,
Petitioner,

v.

LAKSHMI ARUNACHALAM,
Patent Owner.
_____

Case IPR2014-00413
Patent 8,346,894 B2
_____

Before KARL D. EASTHOM, WILLIAM V. SAINDON and
BRIAN J. McNAMARA, *Administrative Patent Judges*.

McNAMARA, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and
37 C.F.R. § 42.73

BACKGROUND

In this proceeding we instituted a trial on the following challenges asserted by SAP America, Inc. ("Petitioner") to the patentability of claims 1–19 of U.S. Patent 8,346,894 B2 ("the '894 Patent") under 35 U.S.C. § 103: claims 1, 3, 4, 5, 8, 14, 15, 17, and 18 as unpatentable over the combination of Chelliah (Ex. 1004), Edwards (Ex. 1005), and Lawlor (Ex. 1006); claims 2, 6, 9, 10, 12, and 16 as unpatentable over the combination of Chelliah and Edwards; claims 7 and 13 as unpatentable over the combination of Chelliah, Edwards, and CompuServe (Ex. 1007); claim 11 as unpatentable over the combination of Chelliah, Edwards, and Bartlett (Ex. 1008); and claim 19 as unpatentable over the combination of Chelliah, Edwards, Lawlor, and Bartlett. Dec. to Institute 49–50. Lakshmi Arunachalam ("Patent Owner") contends that claims 1–19 are patentable over Chelliah individually or in combination with Edwards, Lawlor, Bartlett, and CompuServe and that Chelliah and CORBA, described in Chelliah and Edwards, do not qualify as prior art. PO Resp. 1.

PATENT OWNER'S REQUEST FOR RECUSAL

On December 5, 2014, in response to repeated unauthorized filings, we limited Patent Owner to paper filings and barred her from electronic filing through the Patent Review Processing System ("PRPS"). Paper 23 ("Order") 4–7. We also considered and denied Patent Owner's unauthorized motions to recuse Judge McNamara, stating that Patent Owner's theories concerning mutual fund ownership are not the law and that Patent Owner

had not demonstrated any conflict of interest by any judge in the proceedings involving Patent Owner. *Id.* at 3.

Patent Owner has raised the issue again in the Patent Owner Response. PO Resp. 48–49. A patent owner may file a response to the petition addressing any ground for unpatentability not already denied. 37 C.F.R. § 42.120(a). Thus, the scope of a patent owner response does not include Patent Owner's request for recusal. Nevertheless, because Patent Owner has repeatedly raised this issue, I[1] address it here before proceeding to substantive matters.

I join a long list of judges, including judges of the Court of Appeals for the Federal Circuit and the U.S. District Court for the District of Delaware, as well as other professionals and attorneys,[2] who have been the subject of similar allegations by Patent Owner. *See Leader Tech. v. Facebook, Inc.,* 2012 U.S. App. LEXIS 17259 (Aug. 10, 2012); *Pi-Net Int'l Inc. v. Citizens Fin. Grp.* Case 1:12-cv-00355, slip op. (Memorandum Order, Docket Entry 120) (D. Del., filed March 18, 2015). Patent Owner contends that my financial holdings, which include the Fidelity Contra Fund, the Vanguard Institutional Index Fund, and a small amount of Microsoft stock, create a financial conflict of interest in my presiding over cases involving

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[1] References in this section to "I" or "my" refer to Judge McNamara.
[2] Patent Owner has filed accusations of financial conflicts against at least 5 judges of the U.S. Court of Appeals for the Federal Circuit, 3 judges of the District Court for the District of Delaware, and the Clerk of the Federal Circuit. In addition, in *Pi-Net International, Inc. v. JPMorgan Chase & Co.*, No. 1:12-cv-00282 in the District of Delaware and related cases, Patent Owner has filed numerous papers alleging misconduct by opposing counsel and her own attorneys.

Patent Owner, her predecessor-in-interest (Pi-Net International), or Petitioner. PO Resp. 48. The funds Patent Owner identifies are broad diversified funds, whose holdings are in no way influenced by me. Both the Federal Circuit and District Court for the District of Delaware have addressed similar issues in the decisions identified above, and I will not repeat the analysis here. *See also*, 5 C.F.R. 2640.201(a) (exempting ownership in diversified mutual funds as a basis for recusal).

Turning to Microsoft, Patent Owner alleges that "Microsoft is involved in three re-exams in the CRU (central reexamination unit) against three patents in the same patent portfolio in the same priority chain as the '894 patent." PO Resp. 49. Microsoft's involvement in reexaminations of other patents in the CRU has no relevance to my involvement in any proceeding in which Patent Owner has appeared before me.

First, Microsoft is not a party to this *inter partes* review. Indeed, Microsoft has not been a party to *any* of the proceedings in which Patent Owner has appeared before me.

Second, our rules provide that parties file a Mandatory Notice identifying any Related Proceedings. One reason we require such a notice is "to assist members of the Board in identifying potential conflicts." *See* Office Patent Trial Practice Guide, 77 Fed. Reg. 48756, 48759 (Aug. 14, 2012). Patent Owner has not filed any notice in any proceeding identifying the re-exams as "Related Proceedings." In her Patent Owner Response, Patent Owner still does not identify the re-exams to which she refers. *Id.*

Third, Patent Owner admits that the re-exams involving Microsoft do not pertain to the patents that are the subject of these proceedings. PO Resp.

49. At the initial conference in this proceeding, Patent Owner stated explicitly that the '894 Patent before this panel is not the subject of any reexamination proceedings. Paper 17, 3. The re-exams in the CRU concern different patents with different claims.

Fourth, the reexams are being conducted independently by different personnel in a different administrative arm of the U.S. Patent and Trademark Office. Even if the patents being reexamined in the CRU stem from the same priority chain, they are not patents that are before this panel. The reexamination of different patents by different personnel based on a request filed by a different third party requestor, is not relevant to our inquiry in this proceeding.

Fifth, not having been notified of these reexams, we have not ordered that any reexam proceedings concerning any of Patent Owner's patents in CRU be stayed.

Sixth, Patent Owner has not sought my recusal in a proceeding in which she prevailed when we denied a petitioner's request for covered business method patent review of the '894 Patent. *GSI Commerce Sols., Inc. v. Pi-Net, Inc.* Case CBM2014-00101, Paper 10 (Denial of Institution of Covered Business Method Patent Review) (PTAB October 7, 2014). Patent Owner only raised these allegations in November 2014, after becoming disgruntled at the institution of this and a related proceeding and unsuccessful outcomes in IPR2013-00194, IPR2015-00195, and CBM2013-00013.

Seventh, having reviewed my financial disclosure, Patent Owner is well aware that even if Microsoft were a party to these proceedings, the *de*

minimis value of stock I own in Microsoft, is far below the $15,000 recusal

threshold. 5 C.F.R. § 2640.202(a). Patent Owner's allegations of a financial

conflict of interest in this proceeding are unjustified and not supported by

any evidence.

Finally, after obtaining my financial disclosure, it appears that Patent

Owner arranged to publish it, along with a threatening photo of me

superimposed on a target with a skull and crossbones, on an Internet site of

uncertain ownership and operation. *See*, Paper 23, 2 (describing public

release of this information on November 26, 2014). These actions suggest

an attempt to intimidate. In any case, Patent Owner's conduct has not

influenced and will not influence the outcome of any proceeding before us.

Thus, to the extent that Patent Owner has supplemented her Motion to

Recuse, Patent Owner's Motion is DENIED.

RELATED PROCEEDINGS

The '894 Patent contains the same disclosure as that in U.S. Patent

No. 8,037,158 B2 ("the '158 Patent"),[3] U.S. Patent 5,987,500 ("the '500

Patent")[4] and U.S. Patent No. 8,108,492 B2 ("the '492 Patent").[5] On May

19, 2014, the U S. District Court for District of Delaware reported to the

United States Patent and Trademark Office that, five days earlier, in *Pi-Net*

International, Inc. v. JPMorgan Chase & Co., No. 1:12-cv-00282 (D. Del.

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[3] The '158 Patent is the subject of Final Written Decisions and denied
requests for rehearing in CBM2013-00013 and CBM2014-00018.
[4] The '500 Patent is the subject of a Final Written Decision and a denial of a
request for rehearing in IPR2013-00195.
[5] The '492 Patent is the subject of a Final Written Decision and a denial of a
request for rehearing in IPR2013-00194.

May 14, 2014), the district court granted defendant's motion for summary judgment of invalidity of the '158 Patent, the '500 Patent and the '492 Patent. Ex. 3001. The patent owner at the time, Pi-Net International, Inc., who was also the original patent owner in this proceeding, filed an appeal to the U.S. Court of Appeals for the Federal Circuit ("the Appeal"). The present proceeding continued while the Appeal was pursued. Prior to this Final Written Decision, the '894 Patent was assigned to current Patent Owner, Lakshmi Arunachalam, who joined in the Appeal.

On April 20, 2015, the U.S. Court of Appeals for the Federal Circuit dismissed the Appeal. *Pi-Net International, Inc. and Dr. Lakshmi Arunachalam v. JPMorgan Chase & Co.*, 2015 U.S. App. LEXIS 7126 (Fed. Cir. Apr. 20, 2015). (Ex. 3002). On June 25, 2015, the Federal Circuit denied Patent Owner's request to hear the matter en banc, ordering that a mandate would issue on July 2, 2015. (Ex. 3005). The mandate has now issued. Ex. 3006.

In the district court, defendants had moved for summary judgment that the asserted claims of the '158 Patent, the '500 Patent, and the '492 Patent are invalid for indefiniteness, lack of enablement, and lack of written description.[6] Ex. 3003. The May 14, 2014 District Court's Memorandum Opinion states that among several motions before the court was defendant's motion for summary judgment "for invalidity of the patents in suit." *Pi-Net Int'l., Inc. v. JPMorgan Chase & Co.,* 42 F. Supp. 3d 579 (D. Del. 2014), (Ex. 3004 at 1).

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[6] Defendants moved for summary judgment of invalidity of claim 4 of the '158 Patent, claims 1–6, 10–12, 14–16, and 35 of the '500 Patent and claims 1–8 and 10–11 of the '492 Patent on the same grounds.

The District Court's Memorandum Opinion (included herewith as Ex. 3004) states that the common specification of the '158 Patent, the '500 Patent, and the '492 Patent describes the VAN switch in "conflicting and overlapping ways," "provides no usable description or structure" for numerous terms coined by the inventor,[7] provides no algorithms, source code or guidance as to how to configure a VAN switch to perform real-time transactions using TMP or any other protocol, provides no description of point-of-service applications other than block diagrams labeled bank, car dealer, and pizzeria, lacks any details as to how a VAN switch would accomplish allowing a user to connect to a point-of-service application and does not disclose how real time user transactions occur. *Id.* at 594. (Ex. 3004, 20–21). The District Court's Memorandum Opinion states therefore that "The court concludes that *the patents-in-suit are invalid for lack of written description.*" *Id.* (Ex. 3004 at 21) (emphasis added).

Although the '894 Patent that is the subject of this proceeding was not before the district court, as noted above, the specification of the '894 Patent is substantially the same as the specification of the '158 Patent, the '500 Patent and the '492 Patent and therefore suffers the same infirmities under 35 U.S.C. § 112.

Petitioner cannot assert a challenge to the claims of the '894 Patent under 35 U.S.C. § 112 in an *inter partes* review. 35 U.S.C. § 311 (b). Recognizing that the '894 Patent itself was not before the district court, we consider the arguments raised by the parties in the context of the

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[7] The terms cited by the district court include switching service 702, management service 703, boundary service 701, and application service 704.

scope of this proceeding, which concerns Petitioner's challenges under 35
U.S.C. § 103.

THE '894 PATENT

The invention purports to facilitate real-time two-way transactions, as
opposed to deferred transactions, e.g., e-mail. Ex. 1001, col. 1, ll. 39–48.
The invention also purports to be an improvement over browse-only
transactions, (*id.* at col. 1, ll. 40–62), and limited two-way services on the
Web through Common Gateway Interface (CGI) applications customized for
particular types of applications or services. *Id.* at col. 1, l. 65–col. 2, l. 48.

The patent describes a service network running on top of the Internet
having five interacting components: an exchange agent, an operator agent, a
management agent, a management manager, and a graphical user interface
(GUI). *Id.* at col. 5, l. 61–col. 6, l. 7. As shown in Figure 8, a user connects
to a Web server. *Id.* at col. 9, ll. 29–30. The Web server runs the exchange
component. *Id.* Exchange 501 creates and allows for the management or
distributed control of the service network, operating within the boundaries
on an internet protocol (IP) facilities network. *Id.* at col. 6, ll. 33–36.

A user connected to the Web server running the exchange component
issues a request for a transactional application. *Id.* at col. 9, ll. 29–31. The
Web server receiving the user's request to perform a real-time transaction
hands the request over to an exchange. *Id.* at col. 6, ll. 14–16, col. 9, ll. 31–
32. The exchange 501 includes a Web page 505 that uses a GUI to display a
list of point-of-service (POSvc) applications 510 accessible to the user by
the exchange. *Id.* col. 6, ll. 21–22, ll. 43–44, and col. 9, ll. 33–35. The

POSvc applications are transactional applications that can execute the type
of transaction the user is interested in performing. *Id.* at col. 6, ll. 25–26, ll.
44–46. Exchange 501 also includes a switching component and an object
routing component. *Id.* at col. 6, ll. 23–25. When the user selects a POSvc
application, the switching component in the exchange switches the user to
the selected POSvc application. *Id.* at col. 9, ll. 35–37. The object routing
component executes the user's request. *Id.* at col. 9, ll. 38–39. The
exchange and a management agent thus perform the switching, object
routing, application, and service management functions. *Id.* at col. 6, ll. 36–
41.

The exchange 501 and management agent together constitute a value-
added network (VAN) switch, which provides multi-protocol object routing
via a proprietary TransWeb™ Management Protocol (TMP), depending
upon the services chosen. *Id.* at col. 7, ll. 55–57, col. 7, l. 61–col. 8, l. 2,
col. 8, ll. 44–46. In one embodiment, TMP and distributed on-line service
information bases (DOLSIBs) perform object routing. *Id.* at col. 8, ll. 6–9,
col. 9, ll. 36–38. In DOLSIBs, which are described as virtual information
stores optimized for networking, information entries and attributes are
associated with a networked object identity that identifies the information
entries and attributes in the DOLSIB as networked objects. *Id.* at col. 8, ll.
11–16. Each networked object is assigned an internet address based on the
IP address of the node at which the networked object resides. *Id.* at col. 8,
ll. 16–17. As a result, networked objects branch from a node in a
hierarchical tree structure that establishes the individual object as an "IP-
reachable" node on the internet, so that TMP can use this address to access

the object from the DOLSIB. *Id.* at col. 8, ll. 20–30. Each object in the
DOLSIB has a name, which is an administratively assigned object ID
specifying an object type. *Id.* at col. 8, ll. 31–33. The object type together
with the object instance uniquely identifies a specific instantiation of the
object, e.g., an instance of an object about car models, provides the user with
specific information about a particular model. *Id.* at col. 8, ll. 33–39. Each
object in the DOLSIB also has a syntax, which defines the abstract data
structure corresponding to that object type, and an encoding that defines how
the object is represented by the object type syntax while being transmitted
over the network. *Id.* at col. 8, ll. 39–42.

The VAN switch 520 disclosed has a layered architecture, as shown in
Fig. 7. Boundary service 701 provides the interface between the VAN
switch, the Internet and the Web, multi-media end user devices and the
interface to an on-line service provider. *Id.* at col. 8, ll. 48–52. Switching
service 702, which is described as an OSI application layer switch,
represents the core of the VAN switch. *Id.* at col. 8, ll. 56–58.
Interconnected application layer switches form the application network
backbone and are described as a significant aspect of the subject patents. *Id.*
at col. 8, ll. 64–65. Switching service 702 routes user connections to remote
VAN switches and facilitates connectivity with the Internet (a public
switched network) and private networks, including back office networks,
such as banking networks. *Id.* at col. 8, ll. 61–64. Management service 703
contains tools used by the end users to manage network resources, including
VAN switches, and provides applications that perform Operations,
Administration, Maintenance & Provisioning (OAM&P) functions, such as

security management, fault management, performance management, and

billing management. *Id.* at col. 9 ll. 1–12. Application service 704 contains

application programs that deliver customer services, including POSvc

applications for banking, multi-media messaging, conferencing, financial

services. *Id.* at col. 9, ll. 13–19. Depending upon the type of VAN service,

the characteristics of the network elements will differ. *Id.* at col. 9, ll. 23–

24.

ILLUSTRATIVE CLAIM

1. A computer-implemented method for completing a real-time
Web transaction from a Web application in an on-line service
over a digital network on the Web, the method comprising:

displaying at least one Web application specific to an on- line
service over a digital network on the Web, wherein the Web
application is a point-of-service (POSvc) Web application, and
further wherein the digital network is an overlay service
network running on top of an IP-based facilities network
selected from a group consisting of the physical TCP/IP-based
Internet, the Web and email networks, wherein the facilities
network is a physical network;

accepting a first signal comprising a request from the
point-of-service (POSvc) Web application for a real-time
Web transaction specific to a Web merchant's value-added
network service on the Web offered as the online service
over the digital network on the Web;
utilizing one or more objects in the Web application and the
information entries and the attributes of the one or more
objects, wherein the one or more objects are one or more
individual data structures in and specific to the POSvc Web
application in said request, wherein the individual   data
structure in the POSvc Web application is an object identity

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with the information entries and attributes specific to the Web transaction request from the Web application, to connect in real-time to the value-added network service of the Web merchant without executing Common Gateway Interface (CGI) scripts;

executing said connection at the OSI application layer, utilizing application layer routing of the object identity with the information entries and attributes over the service network on the Web, and further wherein the object in the POSvc Web application is not an SNMP object;

routing the one or more individual data structures in the POSvc Web application together with said information entries and attributes from said Web application over the service network on the Web, wherein the routing the one or more individual data structures in the POSvc Web application together with said information entries and attributes from said Web application over the service network on the Web is object routing on the World Wide Web performed as OSI application layer routing, distinct from routing at the transport layer of the OSI model or network layer of the OSI model or lower layers of the OSI model;

managing the connection between said Web transaction request from the POSvc Web application and the Web merchant's services from end-to-end in real-time; and

completing a real-time Web transaction from said Web application, wherein the online service is a loan Web application.

CLAIM CONSTRUCTION

Patent Owner disputes primarily our claim constructions. PO Resp. 1–38. Citing *In re Skvorecz*, 580 F. 3d 1262, 1267 (Fed. Cir. 2009) for the proposition that the broadest reasonable interpretation is an examination expedient and not a rule of claim construction, Patent Owner asserts that we reached a legally incorrect interpretation, without exploring the metes and

bounds to which Patent Owner is entitled. PO Resp. 7, 15. Consistent with

the statute and the legislative history of the Leahy-Smith America Invents

Act, we interpret claims of an unexpired patent using the broadest

reasonable interpretation in light of the specification of the patent. 37 C.F.R.

§ 42.100(b); *In re Cuozzo Speed Techs. LLC*, No. 2014-1301, slip op. at 16–

19 (Fed. Cir. July 8, 2015) ("Congress implicitly approved the broadest

reasonable interpretation standard in enacting the AIA," and "the standard

was properly adopted by PTO regulation."); Office Patent Trial Practice

Guide, 77 Fed. Reg. 48,756, 48,766 (Aug. 14, 2012). In addition, we have

been afforded numerous opportunities to explore the metes and bounds to

which Patent Owner is entitled, to analyze the terms discussed in the

specification of the '894 Patent, and to revisit and reconsider our

constructions in light of the specification.[8]

 Patent Owner has been unable to identify a standard definition for

many of the terms we construed because the terms were coined in the

specification of the '894 Patent. Patent Owner herself makes this point. PO

Resp. 18. Therefore, we look to the specification to determine what it

discloses as the meaning of those terms. If an inventor acts as his or her own

lexicographer, the definition must be set forth in the specification with

reasonable clarity, deliberateness, and precision. *Renishaw PLC v. Marposs*

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[8] We previously considered the construction of many of the terms used in the
claims at issue in this proceeding in Petitions, Preliminary Responses, Patent
Owner Responses, Petitioner Replies and the supporting evidence proffered
when we rendered our Decisions to Institute, Final Written Decisions, and
Denials of Requests for Rehearing in at least IPR2013-00194, IPR2013-
00195, CBM2013-00013, CBM2014-00018, and CBM 2014-00101 (which
also concerns the '894 Patent and in which we did not institute a trial).

Societa' per Azioni, 158 F.3d 1243, 1249 (Fed. Cir. 1998). As discussed below, however, Patent Owner attempts to read into the claim terms numerous details disclosed in the specification that are not consistent with the broadest reasonable interpretation, or even with the terms as used in the specification. *See, e.g.*, *SuperGuide Corp. v. DirecTV Enters., Inc.*, 358 F.3d 870, 875 (Fed. Cir. 2004) ("[A] particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment."). "Though understanding the claim language may be aided by the explanations contained in the written description, it is important not to import into a claim limitations that are not a part of the claim." *Id.*

Web Transaction

Based on the disclosure in the '894 Patent that "a 'transaction' for the purposes of the present invention includes any type of commercial or other type of interaction that a user may want to perform" (Ex. 1001, col. 5, ll. 34–38), we construed the term "Web transaction" to mean *any type of commercial or other type of interaction a user may wish to perform using the Web.* Dec. to Inst. 14–15. Patent Owner argues that this construction is incomplete because it misses the goal of the invention, as expressed in the title "Real -Time web transactions from web applications." PO Resp. 3. Thus, Patent Owner contends this term should incorporate certain aspects of Web applications and be construed to mean "any type of commercial or other type of two-way interaction with capability to do <u>more than one-way browse-only interaction</u>, <u>a Web user can perform</u>." *Id.* at 1 (emphasis in original). We do not adopt Patent Owner's construction. The term "Web

transaction" stands alone and does not imply any special aspects of certain applications described elsewhere in the specification.

Web and Internet

Patent Owner does not dispute our construction of the term "Web." PO Resp. 5. However, Patent Owner contends we should construe "Internet" to mean "Internet is TCP/IP-based Internet, this is the physical Internet with physical hardware components that provides underlying communication services up to layer 4 of the OSI model and over which an OSI application layer 7 network operates." *Id.* Patent Owner contends that her proposal would be what one of ordinary skill would have understood to be the Internet in 1995. Patent Owner provides no evidence to support such a restrictive construction. Thus, we decline to adopt Patent Owner's proposed construction and we apply the construction we adopted in the Decision to Institute. Dec. to Inst. 15–17.

Web Application

In our Decision to Institute, we declined to adopt Patent Owner's proposal that we read into this term, and into the term "point of Service (POSvc) Web application," a requirement to display an object data structure having attributes and information entries. Dec. to Inst. 17–18. Instead, we construed "Web application" as used in the '894 Patent, to mean *a computer program to perform a certain type of work using the Web.* Patent Owner now proposes that we construe "Web application" to mean "a transactional application that is a Web client displayed in a Web browser or a Web page and that executes a real-time Web transaction a Web user performs and that includes a networked object identity with information entries and attributes."

PO Resp. 6.[9] Patent Owner argues that the invention is not about any

application, but an application displayed on a Web page or Web browser.

PO Resp. 8. Our construction does not preclude such an application.

However, the specification does not limit the term to such a construction.

No such definition appears in the specification. The claims of the '894

Patent recite separate limitations drawn to object data structure features. For

example, claim 1 recites "utilizing one or more objects in the Web

application." Thus, claim 1 recites a Web application with certain

characteristics that may further limit the type of Web application claimed.

These additional limitations do not alter the meaning of the term "Web

application." Incorporating the recited limitations into the construction of

"Web application," as proposed by Patent Owner, confuses the meaning of

the term and renders the claim limitations ambiguous. Thus, we do not

adopt Patent Owner's proposed construction.

POSvc Application

Patent Owner focuses extensively on the construction of the term

"POSvc application." PO Resp. 7–10, 15–23. As noted above, however,

Patent Owner proposes that POSvc Web application be construed to have the

exact same construction as another claim term, i.e., Web application. *Id.* at

6, 15.

As we noted in our Decision to Institute, the specification specifically

states that a POSvc application is "an application that can execute the type of

transaction that the user may be interested in performing." Dec. to Inst. 18

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[9] Patent Owner asserts the exact same construction for another term, i.e., a
POSvc Web application. PO Resp. 15.

(citing Ex. 1001, col. 6, ll. 44–46). Recognizing that an application is a computer program, we construed the term to mean *a computer program that can execute the type of transaction the user may be interested in performing.* Nevertheless, Patent Owner argues that, because the specification also states that a POSvc application is designed to take advantage of the capabilities of the invention, a person of ordinary skill would look at all the descriptions in the Patent and recognize that the term should be construed to include numerous additional details, e.g., a graphical interface; switching, object routing, application and service management functions; and a networked object identity with information entries and attributes with which the user interacts and transacts from described elsewhere in the specification. PO Resp. 7, 16–23. Many of these features, however, are recited in other claim limitations. *See, e.g*., claim 2 (which recites individual data structures in the POSvc application), claim 3 (which recites that the object identity in a POSvc application is the individual data structure in the POSvc application). In addition, the specification describes many of these features as examples, rather than requirements of a POSvc application. *See, e.g.,* Ex. 1001, col. 6, ll. 54–60 (describing "[a]n example of a POSvc application list is illustrated in Fig. 5" and noting that a selected application, such as a Bank POSvc application, will be activated and presented to the user); Ex. 1001, col. 8, ll. 1–15 (referring to "one embodiment" of the invention as using a proprietary TransWeb™ Management Protocol (TMP) with information entries and attributes). Thus, the specification does not support Patent Owner's narrow construction of POSvc application.

Facilities Network

In our Decision to Institute, we construed the term "facilities network" to mean *one or more interconnected elements built or installed to establish underlying communications needed to carry out a function.* Dec. to Inst. 18–19. Stating that "[a]nyone knows that the Internet refers to a TCP/IP-based physical Internet," Patent Owner contends that our construction fails to construe the term in light of specification and in light of one of ordinary skill in the art at the time of the invention. PO Resp. 24. As we noted in the Decision to Institute, Patent Owner does not point to any discussion in the '894 Patent that specifically limits the facilities network to particular layers of the OSI model. Dec. to Inst. 18. The '894 Patent discloses only that each layer communicates with its peer layer in another node through the use of a protocol. Ex. 1001, col. 2, l. 66–col. 3, l. 1. Patent Owner provides no evidence that the "facilities network" discussed in the '894 Patent is limited to the Internet or to any layers of the OSI architecture. Thus, we decline to adopt Patent Owner's proposed construction.

Service Network

In our Decision to Institute, as we have in the other related proceedings, we construed "service network" to mean *a network on which services, other than underlying network communication services, are provided.* Dec. to Inst. 20. Patent Owner's proposal that "service network" be construed to mean "[a]n OSI application layer network running on top of a facilities network and that provides value-added network services (VAN services)" where "VAN services" means "POSvc applications displayed on a Web page, that provides a value-add to the network" demonstrates

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problematic issues with Patent Owner's proposed constructions. For example, Patent Owner proposes that VAN services are POSvc applications displayed on a Web page, but, as we previously discussed in our analysis of POSvc application, Patent Owner argues that a POSvc application is a Web application displayed on a Web page and is the front end client program a Web user utilizes to run the application to perform two-way real-time transactions from the Web merchant Web application. PO Resp. 22. As we previously discussed in our analysis of the term "Web application," Patent Owner argues that a Web application is a transactional application that is a Web client displayed in a Web browser or a Web page and that executes a real-time Web transaction a Web user performs and that includes a networked object identity with information entries and attributes. Thus, Patent Owner's construction of the term "service network" appears to incorporate large portions of the specification. In addition, it is unclear how, or even if, Patent Owner distinguishes a service network from a value added services network, although both terms are used in the claims. PO Resp. 25–26. It is also unclear what Patent Owner means by an OSI layer running on top of a facilities network. For example, claim 1 recites an overlay service network running on top of an IP-based facilities network selected from a particular group of networks. While these features further limit the type of service network, their presence in claim 1 indicates that they should not be incorporated into the construction of the term "service network" itself. The '894 Patent specification further discloses that "[d]epending on the type of service, the network elements will differ." Ex. 1001, col. 9, ll. 23–24. In view of these disclosures, we decline to limit the term "service network" as

proposed by Patent Owner and apply the construction we applied in our
Decision to Institute.

Other Network-Related Terms

Referring only to the Patent Owner Preliminary Response, Patent
Owner offers alternative constructions for the following term: Service
network running on top of a facilities network; overlay service network
running on top of an IP-based facilities network; service network on the
Web; and service network atop the web. PO Resp. 27–28 (citing Prelim.
Resp. 20–21 for each term). We addressed Patent Owner's contentions
concerning these terms at pages 19–21 of our Decision to Institute. In the
absence of further analysis by Patent Owner, we apply the constructions we
applied in the Decision to Institute.

Value Added Network (VAN) Service

Patent Owner argues that VAN Service should be construed as limited
to "[a] POSvc application displayed on a Web page, that provides a value
add to the network and offered as an on-line service over the Web." PO
Resp. 28. Patent Owner argues that the "concept of a VAN Service" is
illustrated in Figs. 5B, 5C, 5D, 6A, and 7 and VAN Service 704 described in
the '894 Patent at column 9, lines 13–27 and column 7, lines 13–26, which
discusses offering such services through an application service network. *Id.*
at 28–29. Petitioner argues that the specification describes VAN service by
way of example and that Patent Owner's construction is overly narrow. Pet.
Reply 7. In our Decision to Institute, we noted that the specification of the
'894 Patent does not define a "value added network (VAN) service," but
describes VAN services as including multimedia messaging,

archival/retrieval management, directory services, data staging, conferencing financial services, home banking, risk management, and other "vertical" services. *Id.* at col. 9, ll. 20–23. Dec. to Inst. 21 (citing Ex. 1001, col. 9, ll. 20–23). The references in the specification to home banking and to the Bank POSvc application discussed in the specification, Ex. 1001, col. 9, l. 15, suggest that a "value added service" is a service that could be provided using an application, such as a POSvc application, but is separate from the underlying communications services performed on a network. Dec. to Inst. 22. The specification of the '894 Patent also equates "application service **704**" with "VAN service **704**." The specification states that application service 704 includes applications that deliver customer services, including POSvc applications. Ex. 1001, col. 9, ll. 12–16. This "includes" language and the disclosure that each VAN service is designed to meet a particular set of performance, reliability, maintenance, and traffic volume requirements requiring the use of different network elements, indicates that a VAN service also may be provided by an application other than a POSvc application. Ex. 1001, col. 9, ll. 14–22.

Patent Owner's proposed construction is incompatible with claim 1. Under Patent Owner's construction, a VAN service is a POSvc application. However, claim 1 recites "accepting a first signal comprising a request from the point-of-service (POSvc) Web application specific for a real-time Web transaction specific to a Web merchant's value-added network service on the Web offered as the online service over the digital network on the Web." It is clear from this language that the POSvc application is specific to a service, but that the Web merchant's value added network service is not

itself a POSvc application. Thus, the proper construction of VAN Service is
"a service other than underlying network communication services on a
network," as we determined in the Decision to Institute. Dec. to Inst. 22.

Internet Cloud Application

Patent Owner contends that "Internet cloud application" should be
construed to have the same meaning as POSvc application. PO Resp. 30.
The term "Internet cloud application" is not used or referenced in the
specification and Patent Owner has produced no evidence of any meaning
other than that applied in our claim construction. As we discussed in the
Decision to Institute, cloud computing is a type of Internet-based computing
in which different services, such as servers, storage, and applications, are
delivered to an organization's computers and devices through the Internet.
Dec. to Inst. 23–24. An Internet cloud application is construed to mean *a
software application that is never installed on a local computer, and instead
is accessed via the Internet.* Dec. to Inst. 24 (citing *Webopedia*,
http://www.webopedia.com/TERM/C/cloud_app.html (last visited July 31,
2014)).

Web Merchant

Patent Owner proposes that this term be construed to mean "'a
provider of goods and services using the Web. . . . [A] POSvc application',
which is the same as a VAN service provider." PO Resp. 30. We have
already addressed the distinction between a VAN service and a POSvc
application in this Final Written Decision. A Web merchant "choose[es] the
types of services that it would like to offer its clients." Ex. 1001, col. 7, ll.
13–14. Although a Web merchant could use a POSvc application to provide

those services, *id.* at col. 7, ll. 14–15, the term "Web merchant" is not limited by the specification to a provider of POSvc applications. For purposes of this Decision, we construe "Web merchant" to mean *a provider of goods and services using the Web*.

Object

In the Preliminary Response, Patent Owner responded to Petitioner's proposed construction of "[One or more] objects in the Web application." Prelim. Resp. 22–24. Having construed Web application separately, we addressed the meaning of "object" as used in the specification and adopted neither party's proposed construction. Dec. to Inst. 24–25. Reiterating a position taken in the Preliminary Response, Patent Owner proposes that we construe the term "object" to mean a data structure having attributes and information entries. PO Resp. 31–33. Patent Owner notes that the relevant term is actually "networked object." *Id.* at 32. Although Patent Owner contends that the "common definition" of object refers to a data structure specific to an application and consists of data and methods, Patent Owner attempts to limit the term "application" to POSvc Web applications displayed in a Web page. *Id.* Patent Owner contends that the specification supports such definitional restrictions. *Id.* at 32–33 (citing Ex. 1001, col. 8, ll. 12–43). Petitioner contends that the '894 Patent does not support Patent Owner's narrow construction. Pet. Reply. 8–9.

We address the term "object" as it is used in the specification. The '894 Patent Specification does not define the term "object." The '894 Patent gives an example of an object as "information about models of cars" and describes one instance of the object as providing a user with information

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about a specific model of car. Ex. 1001, col. 6, ll. 35–39. The specification also states that a "networked object identity" identifies, as an individual networked object, information entries and attributes in a distributed on-line-service information base (DOLSIB), *id.* at col. 8, ll. 11–16, with each object in the DOLSIB having a name (which is an administratively assigned object ID specifying an object type), a syntax (which defines the abstract data structure corresponding to the object type) and an encoding (which defines how the object is represented while being transmitted over the network), *id* at col. 8, ll. 31–35. Each such networked object is assigned an Internet address based on the node at which the networked object resides. *Id.* at col. 8, ll. 17–19.

The "utilizing one or more objects" limitation of claim 1 recites "wherein the one or more objects are one or more individual data structures in and specific to the POSvc Web application." Thus, the claim itself defines objects as data structures. Claim 1 separately recites "the individual data structure in the POSvc Web application is an object identity with information entries and attributes specific to the Web transaction request from the Web application." Neither this limitation nor the disclosure in the specification that the syntax defines the abstract data structure of an object, limits an object, as used in the '894 Patent, to any particular type of data structure.[10] Thus, for purposes of this Decision, we construe the term

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[10] It may also be unclear how there are one or more objects, which are individual data structures in the POSvc application, while the data structure in the POSvc application is an object identity with information entries and attributes specific to a Web transaction request from the Web application.

"object" to mean *an identifiable information element having a structure defined by syntax.*

Information Entries and Attributes of an Object

We construed "information entries and attributes of an object to mean *characteristics of an object.*" Dec. to Inst. 25. The parties do not dispute our construction of this term to mean *characteristics of an object.* PO Resp. 33, Pet. Reply 9. Patent Owner contends that these values represent the Web transaction specified by the Web user corresponding to the attributes specific to the POSvc application. PO Resp. 33. However, Patent Owner does not identify any persuasive support for adding this further limitation to our construction, and we decline Patent Owner's proposed further limitation.

Application Layer Routing of the Object Identity with the Information Entries and Attributes

Arguing that the term "object identity" refers to "networked object identity" and means an individualized networked object that has information entries and attributes, Patent Owner proposes that this term be construed to mean "OSI application layer routing of the individual networked object— information entries and attributes— from a POSvc application displayed on a Web page or in a Web browser." PO Resp. 34. Patent Owner contends that our construction omits OSI application layer routing, which is different from network layer routing. *Id.* Petitioner contends that Patent Owner seeks to bundle language already in the claims into this limitation and that the specification explicitly describes application layer routing as "routing [that] creates an open channel for the management, and the selective flow of data from remote databases on a network." Pet. Reply. 10 (citing Ex. 1001, col. 5, ll. 27–29.) According to Petitioner, this description does not limit

"*application layer routing*" to "OSI application layer routing of the
individual networked objects" or to routing "from a POSvc application
displayed on a Web page or in a Web browser." Pet. Reply 10.

Claim 1 distinguishes OSI application layer routing as being distinct
from routing at the transport layer or network layer or lower layers of the
OSI model. In our discussion of the construction of "object" we also noted
that the "networked object identity" in claim 1, recites the information
entries and attributes. Thus, it is not necessary to include these distinctions
in the construction of this term.

The specification states that "[a]pplication layer routing creates an
open channel for the management and the selective flow of data from remote
databases on a network." Ex. 1001, col. 5, ll. 27–29. Figure 4A illustrates
conventional transactions and Figure 4B illustrates an embodiment of the
invention. *Id.* at col. 3, ll. 23–26. The difference between the conventional
approach in Figure 4A and that of the invention in Figure 4B is in the service
channels, where Figure 4B includes a box labeled "Trans-Web Exchange."
The box labelled TransWeb Exchange shows a webpage and POSvc apps.
Thus, consistent with our Decision to Institute, we construe "application
layer routing of the object identity with the information entries and
attributes" to mean *routing that creates an open channel for the management
and selective flow of data identified by information entries and attributes
from remote databases on a network.* Dec. to Inst. 27–28.

Object Routing

Patent Owner contends that "object routing" should be construed to
mean "OSI application layer routing of individual networked objects —

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information entries and attributes in a DOLSIB, a virtual information store optimized for networking — from a POSvc application displayed on a Web page or in a Web browser on the Web." PO Resp. 35. Petitioner notes that Patent Owner cites to the arguments advanced at page 35 of the Patent Owner Preliminary Response, but provides no further substantive argument in the Patent Owner Response. Pet. Reply 10.

Patent Owner's proposed construction, which defines object routing as some kind of application layer routing of individual networked objects, does not state what constitutes object routing. Claim 1 recites that the routing of the individual data structures in the POSvc application together with the information entries and attributes for the Web application over the service network is object routing on the World Wide Web performed as OSI application layer routing. Thus, the terms Patent Owner seeks to incorporate into the definition of object routing are already recited in the claim and provide no further definition. The claim states that object routing is distinct from routing at the transport layer, network layer, or lower layers of the OSI model, but does not define what elements of object routing constitute such a distinction. Nor does the claim actually state that objects themselves are routed. Instead, the '894 Patent discloses that networked objects are associated with IP addresses. For example, all networked objects associated with a Web server are assigned an Internet address based on the Web server's address. Ex. 1001, col. 9, ll. 21–23. There is no disclosure that objects are themselves routed from one IP address to another, or that their IP addresses change. Instead, the Internet address for each networked object establishes the individual object as an "IP reachable or accessible node on

the Internet" and a proprietary TransWeb Management Protocol (TMP) utilizes that IP address to uniquely identify and access the object from the DOLSIB. *Id.*, col. 8, ll. 14–30. Claim 1 next recites managing the connection between the Web transaction request from the POScv Web application, which we have construed to mean a computer program that can execute the type of transaction the user may be interested in performing, and the Web merchant's services from end-to-end in real time. The user selects a transactional application (e.g., a POSvc application) and accesses services provided by the Web merchant (service provider) using object routing, which the claim recites occurs at the application level. Thus, in the context of the specification and claims of the '894 Patent we construe "object routing" to mean *the use of individual networked objects to route a user from a selected transactional application to the processing provided by the service provider*.

Exchange

Patent Owner contends that the structure disclosed in the specification for this element is "Web page 505, POSvc applications 510 on a Web page, switching service 702, object routing component, also known as object router (which includes the individual networked objects— the information entries and attributes displayed in a POSvc application displayed on a Web browser or Web page)." PO Resp. 35–36. Petitioner contends that Patent Owner's proposed construction lacks support, relies upon Patent Owner's flawed construction of POSvc application, and does not address the function of the Exchange recited in claim 10. Pet. Reply 11. As Petitioner notes, claim 10 recites that "the Exchange manages in real-time the connection

between the real-time Web transaction request and any commercial service."
Id. at 11 (citing Ex. 1001, claim 10). We determined that this limitation
sufficiently defines the term Exchange. Dec. to Inst. 28–29.

The '894 Patent discloses that the Exchange "conceptually" includes a
switching component and an object routing component. Ex. 1001, col. 6, ll.
23–25. Although the specification states that these elements are described in
more detail, the specification does not describe a specific structure for the
eExchange itself. Instead, the specification states that the exchange and a
management agent together perform the switching, object routing,
application and service management functions, in one embodiment of the
invention. *Id.* at col. 6, ll. 36–41. The Exchange is one of five components
that interact to provide service network functionality. *Id.* at col. 6, ll. 3–4.
Like the Trans-Web Exchange in Figure 4B, the '894 Patent describes
exchange 501 as comprising a Web page 505 and POSvc applications. *Id.* at
col. 6, ll. 21–23. The Exchange may also include an operator agent and can
reside on a Web server or on a separate computer on the Internet, or on the
computer system of one or more of the Web merchants. *Id.* at col 6, ll. 28–
31 and 64–67.

Claim 10 further limits claim 2 by reciting that the machine readable
storage device in the claimed apparatus includes instructions for "utilizing a
distributed control on the Web in the real-time transaction request, wherein
the real-time transaction request is handed over to an Exchange." Claim 10
further recites that "the Exchange manages in real-time, the connection
between the real-time Web transaction request and any commercial service."
Thus, claim 10 recites the claimed apparatus having a machine readable

storage device with the claimed instructions by reciting the functions

performed by the Exchange. In view of this description in claim 10 itself, no

further construction of the term "Exchange" is required.

Back-end Application

Patent Owner's proposed construction that a "back-end application" is

"an application not at the front end" (PO Resp. 37) offers no meaningful

definition of a back end application. Patent Owner argues that in the

absence of a POSvc applications, Back Office applications were islands and

did not connect to the Web, so a Web user had no way to perform 2-way real

time transactions with an enterprise. PO Resp. 37–38. This argument sheds

no further light on the term "back-end application," which is not used in the

specification. Patent Owner argues that for security reasons the user cannot

access the "back-end application," *id.*, although there is no such discussion

in the specification. To the contrary, the specification states that once a

POSvc application has been activated, the user will be able to connect to

bank services and utilize the application to perform banking transactions,

thus accessing data from a host or data repository in the bank "Bank Office,"

Ex. 1001, col. 7, ll. 1–5. Thus, the specification gives an example of a point-

of-service application connecting the users to a Bank Back Office

comprising legacy databases used by the Bank. Ex. 1001, col. 7, ll. 1–12.

The specification describes transactions, such as transferring funds between

a checking and savings account, car loan processing, or human resources

processing, as features of point-of-service applications. *Id.* at col. 7, ll. 13–

52. There is no clear description of a connection between a point-of-service

application and a back-end office application. Therefore, we construe

"back-end application" to mean *a computer program executed using a computer system or database accessed by a user via an application.*

ANALYSIS OF PRIOR ART CHALLENGES

Introduction

Reviewing the entirety of Patent Owner's Response, we note that many of Patent Owner's arguments are neither substantive nor supported by evidence of any kind. Patent Owner questions the integrity and competence of the panel, Petitioner's counsel, and Petitioner's witness, Dr. Sirbu. *See, e.g.,* PO Resp. 40 (where Patent Owner asserts "Dr. Sirbu's annotation of Chelliah's Fig. 2 is fraudulently misleading"). Patent Owner also states that the panel allowed itself to be misled by non-factual arguments advanced by Petitioner's counsel and expert witness that were intended to mislead. Prelim. Resp. 41–42, 45–47. *See also id.* at 48 (where Patent Owner states "PTAB's brash conclusions, blindly adopting SAP's counsel's and SAP's expert witness' misleading statements almost completely ignoring what the '894 specification, file history, and intrinsic and extrinsic record teach and disclose are erroneous and kill innovation"). Patent Owner further argues her own counsel's incompetence, stating that in the Patent Owner Preliminary Response, her counsel failed to follow her instructions. *Id.* at 45–46. Patent Owner further contends that *inter partes* reviews and covered business method patent reviews conducted under the America Invents Act are "a totally sham process, intended to legalize piracy and give innovations from genuine inventors away for free to deep-pocketed infringers, thus negating the need for the USPTO to even exist anymore." PO Resp. 48.

None of the Patent Owner's polemics are supported by the evidence. Patent Owner's disagreement with Petitioner's positions does not imply nefarious conduct, and we do not credit any of Patent Owner's assertions of incompetence, fraud, or misconduct.

Substantive Issues

We have reviewed the entirety of Patent Owner's Reponse. Patent Owner's Response addresses the claims in groups and focuses on several major issues, but does not address the challenges on which this *inter partes* review was instituted on a claim-by-claim or ground-by-ground basis. Our Decision to Institute applies our constructions and addresses in detail the limitations of each of the challenged claims and Petitioner's challenges to those claims, individually. Dec. to Inst. 29–49. As Patent Owner has not persuaded us to apply claim constructions that differ from those we applied in the Decision to Institute, in this Final Written Decision, we adopt our analysis in the Decision to Institute and do not repeat it here.

A primary focus of the Patent Owner Response is Patent Owner's contention that the prior art does not disclose a POSvc application. PO Resp. 55 (citing Ex. 1001, col. 7, ll. 13–26). In our Decision to Institute, we noted that Chelliah describes a computer architecture for on-line commerce that defines an electronic infrastructure to enable transactions analogous to those occurring in a physical structure, i.e., an electronic mall comprised of a collection of electronic stores, where each commercial transaction for goods and services from an electronic store is to a participant in the electronic commerce architecture, e.g., a customer. *See* Ex. 1004, col. 2, ll. 37–42, col. 3, ll. 7–11, col. 5, ll. 59–61, col. 6, ll. 5–12. Chelliah discloses an

implementation using various program objects, each of which is an integrated collection of data and functions that describe an entity or business function and the operations that can be performed on or by the entity or business function. *Id.* at col. 9, ll. 30–33. Such program objects can also access databases, serve as interfaces to non-object-oriented subsystems and may be in compliance with the Common Object Request Broker Architecture (CORBA). *Id.* at col. 9, ll. 33–38. Chelliah discloses that CORBA provides mechanisms by which objects may be distributed among various computers and transparently make requests and receive responses. CORBA provides for an Object Request Broker (ORB) that facilitates inter-operability between applications on different computers and interconnects multiple object systems. *Id.* at col. 9, ll. 39–48. Having construed a "Web application" to mean a computer program to perform a certain type of work using the Web and a "point-of-service (POSvc) Web application" to mean a computer program that can execute the type of transaction the user may be interested in performing, we determined that Chelliah discloses these features. Dec. to Inst. 29–33.

Chelliah also discloses that the user interface can be implemented to present items available for purchase to the customer using icons in an interactive system, such as an online service or a WWW session. Ex. 1004, col. 14, ll. 43–48. The user interface calls the Sales Representative Program Object to inform that program object of the selected item. *Id.* at col. 14, ll. 52–54. Petitioner's expert, Dr. Marvin Sirbu, testified that when data associated with the client request message is provided by the Sales Representative Program Object to the Payment Handler Interface disclosed

in Chelliah, the data is formatted or arranged in a particular manner (a syntax). Ex. 1002 ("Sirbu Decl.") ¶ 92. We have construed objects to be identifiable information elements having a structure defined by syntax and the information entries and attributes of an object to be the characteristics of an object. Dr. Sirbu testified that the data can be arranged to support web-based communications between two computer platforms and that standard CORBA interface definition language (IDL) provides for encoding the object for transport over the Internet. *Id.*

As noted above, a fundamental basis of Patent Owner's substantive arguments is that Chelliah (Ex. 1004) does not teach or suggest the use of a Web application, as properly construed, PO Resp. 38–39, 51–52, and that nothing in Chelliah or any of the other prior art teaches or suggests, alone or in combination, the use of a POSvc Web application, as claimed and properly construed, *id*. at 54–55. Arguing that "PTAB's construction of Web application is an incompetent effort," Patent Owner contends that neither Chelliah, Edwards, Lawlor, CompuServe, nor Bartelett disclose a "real time Web transaction from a Web application." PO Resp. 38–39.

Applying her construction of POSvc application, which we do not adopt, to claims 1–3, Patent Owner argues that, because Chelliah does not disclose a POSvc application, there can be no connection between the web and back-end internal and external sub-systems or the Sales Representative Object disclosed in Chelliah. *Id.* at 41. Hence, according to Patent Owner, Chelliah does not disclose the claimed service network, service network running on top of a facilities network, or VAN service, which itself is a POSvc application. *Id.* at 42. Patent Owner also argues that because neither

Chelliah nor Edwards, nor any of the other cited art discloses a POSvc Web application displayed on a Web page, nor a POSvc application that includes an object or object identity with information entries and attributes, there is no disclosure of the "accepting," "utilizing," "POSvc Web application," "Web merchant," "value added network service," "object," and "object identity with information entries and attributes in a POSvc Web application" limitations in the claims. *Id*. at 42–43. Thus, Patent Owner also summarily asserts that the limitation "VAN service" and "value-added network application resides at the transaction network entry point on the Web" in claim 5, the "Web application and other limitations in claims 6, 9, 11–14, 18, and 19, the "VAN service limitation in claims 7, 8, 15, and 17, and the "service network on the Web" limitation in claims 6 and 9–12, are "missing from each of the cited art." *Id.* at 44.

Patent Owner contends that Lawlor, which discloses the delivery of remote banking services over a telephone and packet switched network (Ex. 1006, Abstract) and is cited only for the proposition that it would have been obvious to allow a bank that provides loans to be an electronic storefront in the system of Chelliah, (Pet. 35–36) precedes the Web. PO Resp.39. Patent Owner also argues that the remaining art existed "when the Web was in its infancy, when the norm was URLs, Web pages, hyperlinking or hot links, HTML forms, CGI, but no applications displayed on a Web page." *Id*. Patent Owner argues that the references do not disclose a POSvc Web application because the '894 Patent distinguishes over prior art in which a user can perform a transaction using a personal computer by activating application software on his PC to access his bank account and <u>dialing into a</u>

bank modem. *Id.* (citing Ex. 1001 col. 5, ll. 46–48) (emphasis in original).
The applicability of such prior art, however, is consistent with the disclosure
in the '894 Patent, which states explicitly that

> each merchant that desires to be a Web merchant
> can provide real-time transactional capabilities to
> users who desire to access the merchants' services
> via the Web. . . .   For the purposes of this
> application, users are described as utilizing PC's to
> access the Web via Web server "switching" sites . .
> . Users may also utilize other personal devices
> such as network computers or cellular devices to
> access the merchant's services via appropriate
> switching sites. These switching sites include non-
> Web network computer sites and cellular provider
> sites.

Ex. 1001, col. 5, l. 58–col. 6, l. 3.

In addition, although Chelliah is not limited to implementations using
the Internet or the World-Wide Web, Chelliah specifically discloses an
approach using the World Wide Web. Chelliah discloses that the Customer
Contact System may be "a World-Wide Web (WWW) site on the Internet
accessed by a customer using a WWW browser application across a TCP/IP
connection." Ex. 1004, col. 12, ll. 4–9. In the '894 Patent, Fig. 5C shows a
Web page displaying a list of applications a user can choose from, including
a bank, car dealer, or pizzeria. Ex. 1001, col. 6, ll. 54–55. In Chelliah, the
customer enters an electronic mall as displayed on a Web page, where the
customer is presented with a choice of electronic stores offering different
products and services, which the customer can select using a mouse/cursor
or other input device. *Id.* at col. 6, ll. 27– 40. Thus, even if we construed a
POSvc application to require a display of the application on a Web page, i.e.,

a display on a Web page allowing a user to select a particular POSvc application for transacting business with a provider of goods and services, Chelliah discloses that feature.

Patent Owner argues that "with or without networked object with information identities and attributes in a POSvc Web application, a POSvc Web application is non-existent in the cited art and no such application is displayed on a Web page or Web browser in the cited art." PO Resp. 44. Citing her attorney's purported errors in the Patent Owner Preliminary Response, Patent Owner further argues it was made clear in the prosecution of the parent application ("the '178 Application") that an object identity is an individual data structure specific to a POSvc application on a Web page and that this is significantly different from HTML forms, hyperlinking to URLs, and CGI. *Id.* at 45–46. Patent Owner further argues that Chelliah's sales Representative Object is a "back-end application," as Patent Owner construes the term, and argues extensively that Petitioner misled the panel. *Id.* at 44–48. Substantively, Patent Owner argues that Chelliah does not disclose what interface to the Web is provided from the Sales Representative program Object, which Patent Owner contends is an internal back-end internal system that interfaces to other back-end internal or external sub-systems, such as VIA and FEDEX back-end systems and Oracle databases. *Id.* at 50.

In contrast to Patent Owner's assertion, however, Chelliah discloses that the user interface can be implemented to present items available for purchase to the customer using icons in an interactive system, such as an online service or a WWW session. Ex. 1004, col. 14, ll. 43–48. In Chelliah

the user interface calls the Sales Representative Program Object to inform that program object of the selected item. *Id.* at col. 14, ll. 52–54. We have construed the POSvc application to be one that can execute the type of transaction the user may be interested in performing. As discussed above, Petitioner has demonstrated that Chelliah discloses such a program. In addition, Chelliah discloses that interaction between the Sales Representative Program Object and the customer, for example to communicate information about items to be purchased, is through User Interface 13, and that the electronic mall and its electronic stores are composed of independent functional subsystems located at various platforms and networks including the Internet, which can be used to access the Web. Ex. 1004, col. 6, ll. 15–18, col. 12, ll. 1–8.

Petitioner notes that Chelliah discloses using the Sales Representative Program Object to accept the request and pass it to the Payment Handler Interface and the Order Fulfillment Subsystem. Pet. 30, 33–34. We have construed the information entries and attributes of an object to mean the characteristics of an object. Patent Owner previously argued specifically that Chelliah does not disclose "one or more objects in the Web application." Prelim. Resp. 48. Chelliah discloses that each of its program objects is an integrated collection of data and functions that describe an entity or business function, and the operations that can be performed on or by the entity or business function, and may comply with CORBA. Ex. 1004, col. 9, ll. 30–37. Chelliah further states that the Sales Representative Program Object, which is created when a customer selects a store (and therefore, is in the application), has access to information about the customer and controls the

flow of a transaction processing session, forming part of an Internal Commerce Subsystem. *Id.* at col. 10, ll. 31–43. Thus, Petitioner has demonstrated that Chelliah discloses the portion of the "utilizing" limitation in claim 1 (designated by Petitioner as limitation 1.4) that recites utilizing one or more objects in the Web application and the information entries and attributes of those objects. Petitioner has demonstrated that Chelliah also discloses the portion of the "utilizing" limitation designated by Petitioner as limitation 1.7, which recites connecting in real time to the value-added network service of the Web merchant. Petitioner has also demonstrated that this utilization is accomplished without executing Common Gateway Interface (CGI) scripts, as recited in the portion of the "utilizing" limitation designated by Petitioner as limitation 1.8.

Petitioner designates as limitation 1.5 the portion of the "utilizing" limitation that recites "the one or more objects are one or more individual data structures in and specific to the POSvc Web application in said request." Pet. 58. Petitioner designates the next portion of the "utilizing" limitation, which limits "the individual data structure in the POSvc application" to "an object identity with the information entries and attributes specific to the Web transaction request from the Web application," as limitation 1.6. *Id.* Petitioner addresses these limitations together with another limitation, designated as limitation 1.10, which recites that "the object in the POSvc Web application is not an SNMP object." *Id*. at 26–29.

Petitioner's expert, Dr. Marvin Sirbu, testified that when data associated with the client request message is provided by the Sales Representative Program Object to the Payment Handler Interface, the data is

formatted or arranged in a particular manner (a syntax). Ex. 1002 ("Sirbu Decl.") ¶ 92. We have construed objects to be identifiable information elements having a structure defined by syntax and the information entries and attributes of an object to be the characteristics of an object. We are persuaded by Dr. Sirbu's testimony that the data can be arranged to support web-based communications between two computer platforms and that standard CORBA interface definition language (IDL) provides for encoding the object for transport over the Internet. *Id.* In our discussion of the construction of the term "object" in the Decision to Institute, we noted that neither claim limitation 1.5 (wherein the one or more objects are one or more individual data structures in and specific to the POSvc Web application in said request), nor the disclosure that the syntax defines the abstract data structure of an object, limits an object to any particular type of data structure. Dec. to Inst. 25. We have construed the information entries and attributes of an object to be the characteristics of an object. *Id.* Petitioner points out that Chelliah teaches the use of distributed objects in compliance with CORBA. Pet. 26. Chelliah specifically states that program objects, such as the Participant Program Object, Customer Monitoring Object, or Sales Representative Program Object, may be distributed among various computers according to the business needs and responsibilities of the entities involved in the system. Ex. 1004, col. 9, ll. 45–48. Thus, we are not persuaded by Patent Owner's argument that Chelliah does not disclose an interface to the Web. In Chelliah, a WWW session calls the Sales Representative Program Object, which interfaces with the customer and other objects to conduct a transaction.

Patent Owner disputes the combination with Edwards, contending that, while Chelliah discloses the possible use of CORBA, CORBA has nothing to do with user interfaces or Web browsers. PO Resp. 54. Patent Owner argues that CORBA disclosed an ORB to connect from one program object to another program object, all in the back-end and concerns the physical TCP/IP network. *Id.* at 55. According to Patent Owner, Chelliah and CORBA disclose a CORBA client object which runs local to the back-end of an enterprise making a call to an ORB, requesting services from a remotely executing CORBA object rather than an individual networked object with information entries and attributes in a DOLSIB and displayed in a POSvc application on a Web page. *Id.* at 55. Pointing to Edward's disclosure of replacing CGI scripts with CORBA in a theatre ticket application, Patent Owner argues, without further explanation, that CGI and CORBA are not interchangeable and that CORBA does not connect to the Web. PO Resp. 48. Patent Owner fails to recognize that the issue is not interchangeability of CGI and CORBA, but the combination of the prior art under 35 U.S.C. §103.

Edwards discloses that both CORBA and WWW (using Hypertext Transfer Protocol ("HTTP")) are distributed object oriented systems: clients invoke methods (or operations) on server objects. Ex. 1005, 10. WWW services use HTTP, which defines a standard transport protocol, while in CORBA objects communicate with each other using Object Request Brokers (ORBs) which provide a transport protocol for passing invocation requests and replies between objects. *Id.*

Edwards discloses CORBA and "object wrapping," which can be applied to both CORBA and World Wide Web (WWW) models. Ex. 1005, 8, 10.[11] The CORBA distributed object approach integrates third party (or legacy) services using an object wrapper that encapsulates the service, a description of which is written in interface definition language (IDL). *Id.* at 11. Code is then written to invoke the appropriate set of actions in the legacy application when one of the object wrapper's methods is invoked. *Id.* Edwards describes an example that facilitates a customer's theatre ticket purchase by making the client an agent which migrates to the customer machine when needed, so that the customer needs only a browser and compute engine to support the agent. *Id.* at 15. This approach replaces a process using HTML form technology to access CGI scripts, which must store temporary states externally between method invocations because CGI programs are re-forked each time they are invoked. *Id.* at 14. Thus, Petitioner has demonstrated by a preponderance of the evidence that the combination of Edwards and Chelliah disclose many of the limitations of the claims of the '894 Patent.

Chelliah discloses using the Internet as a transport mechanism to transmit data representing purchase requests between a proprietary browser and a server product pair, and its objectives include a family of interconnected commerce systems that accommodate a wide variety of implementations. *See, e.g.*, Ex. 1004, col. 1, ll. 25–27, col. 2, ll. 37–64, col. 3, ll. 8–10, 18–20, col. 14, ll. 45–48. Petitioner argues that Chelliah's

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[11] References are to the page numbers of Exhibit 1005, rather than the page numbers in the published document, which are duplicative.

disclosure of a Customer Contact System 140 as a World-Wide Web
(WWW) site, including user interface 13 and Participant Program Object
112, and its description of a payment query display in Figure 9, discloses a
point-of-service Web application because they facilitate the execution of
transactions requested by the customer. Pet. 19–20.

Chelliah discloses that CORBA provides mechanisms by which
objects may be distributed among various computers and transparently make
requests and receive responses. CORBA provides for an Object Request
Broker (ORB) that facilitates inter-operability between applications on
different computers and interconnects multiple object systems. *Id.* at col. 9,
ll. 39–48. Petitioner further notes that Chelliah discloses communicating
between a Sales Representative Program Object on one computer platform
and a Payment Handler Interface on another computer platform using the
HTTP protocol. Pet. 31. Citing the Sirbu Declaration, Ex. 1002 ¶¶ 100–01,
Petitioner maps the HTTP protocol in the application layer of the five layer
TCP/IP based web protocol stack to the application layer of the seven layer
OSI model. Pet. 31–32. Petitioner also relies on this analysis to show that
the application layer routing is distinct from routing at the transport layer,
network layer or lower layers of the OSI model, as recited in the limitation
designated as limitation 1.12. Pet. 32–33.

Consistent with the '894 Patent specification, we have construed the
term "application layer routing of the object identity with the information
entries and attributes" to mean routing that creates an open channel for the
management and the selective flow of data identified by information entries
and attributes from remote databases on a network. Applying this

construction, we note that in Chelliah, the Sales Representative Program
Object has access to information and controls the flow of a transaction
processing session. Ex. 1004, col. 10, ll. 35–39. In Chelliah, a customer
enters the Electronic Mall thorough a User Interface through which the
customer selects an Electronic Storefront. *Id.* at col. 6, ll. 26–43. After
receiving the customer's request for a transaction, the Sales Representative
Program Object, which is part of an internal commerce subsystem for a
particular Electronic Storefront, manages the flow of data, for example, by
opening a channel by calls to a Product Database, which has files to provide
information about particular items to the Sales Representative Program
Object, *id.* at col. 10, l. 54–col. 11, l. 3, or by invoking the Payment Handler
Interface, which serves as a front end to convert an object-oriented function
call, such as a CORBA call, to a call to an External Payment Handler, *id.* at
col. 11, ll. 40–47. Thus, we are persuaded that the combination of Edwards
and Chelliah discloses the executing limitations designated by Petitioner as
limitations 1.9 and 1.10.

Petitioner contends that Chelliah discloses the "routing limitation."
Petitioner designates the first part of the "routing limitation," which recites
the routing of individual data structures in the POSvc Web application
together with the information entries and attributes from the Web application
over the service network on the Web, as limitation 1.11. Petitioner
designates the second part of the "routing limitation" as the claimed "object
routing performed in the OSI layer." We have already discussed the
remaining portion of the "routing limitation," which recites application layer
routing is distinct from routing at the transport layer and lower layers of the

OSI model. We have construed the claimed "service network" to mean the network on which services other than underlying network communication services are provided. Petitioner has demonstrated by a preponderance of the evidence that Chelliah's disclosure of a client request message routed from the Sales Representative Program Object on one computer platform to another computer platform with the Payment Handler Interface discloses the routing of individual data structures in the POSvc Web application together with information entries and attributes from the Web application over the service network on the Web. This routing disclosed by Chelliah is not related to the underlying network communications, but to the services performed by the overall Electronic Mall network.

Having already addressed the issue of OSI application layer routing, we consider the issue of "object routing." We have construed object routing to mean the use of individual networked objects to route a user from a selected transactional application to the processing provided by the service provider. As discussed above, Chelliah discloses that, after entering the Electronic Mall, the customer enters an Electronic Storefront (selects a POSvc application) and conducts transactions with the assistance of various program objects. Selecting an Electronic Storefront from an Electronic Mall, which Chelliah describes can be accessed with a Customer Contact System via a Web site (Ex. 1004, col. 12, ll.1–8, Fig. 2), and conducting a transaction within the selected storefront corresponds to the disclosure in the '894 Patent of a user selecting a POSvc application from a list presented on a Web page. After selecting an Electronic Storefront, the Sales Representative Program Object, using CORBA architecture, routes the

customer from the application to appropriate processing, such as that provided by the Payment Handler Interface. Thus, we are persuaded that Chelliah discloses the object routing that is the subject of limitation 1.12.

We are persuaded further that one of ordinary skill would have been motivated to combine Chelliah, which describes the use of a CORBA architecture in a commercial transaction network, with Edwards, which describes an implementation of a commercial transaction, such as purchasing theater tickets, using CORBA instead of CGI scripts.

As we noted above, the Patent Owner Response does not address the specific challenges on which we instituted this *inter partes* review. For the reasons discussed above and in the Decision to Institute, Petitioner has demonstrated by a preponderance of the evidence that claim 1 is unpatentable over the combination of Chelliah, Edwards, and Lawlor. Patent Owner has not rebutted Petitioner's evidence individually, or addressed individual claims in detail.

CONCLUSION

Patent Owner does not respond specifically to the grounds on which we instituted this *inter partes* review. Having reviewed the Patent Owner Response and Petitioner Reply, and in consideration of the matters discussed above and in the Decision to Institute, we conclude that Petitioner has established by a preponderance of the evidence that claims 1, 3, 4, 5, 8, 14, 15, 17, and 18 are unpatentable over the combination of Chelliah, Edwards, and Lawlor; claims 2, 6, 9, 10, 12, and 16 are unpatentable over the combination of Chelliah and Edwards; claims 7 and 13 are unpatentable over

the combination of Chelliah, Edwards, and CompuServe; claim 11 is unpatentable over the combination of Chelliah, Edwards, and Bartlett; and claim 19 is unpatentable over the combination of Chelliah, Edwards, Lawlor, and Bartlett.

ORDER

It is ORDERED, that claims 1–19 of the '894 Patent are unpatentable;

FURTHER ORDERED that Patent Owner's Motion to Recuse remains DENIED; and

FURTHER ORDERED, that because this is a final written decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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