

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CLOVER NETWORK, LLC,

Petitioner,

v.

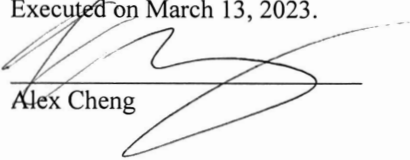
CLOUDOFCHANGE, LLC,

Patent Owner.

Case IPR2023-00288
Patent 10,083,012 B2

DECLARATION OF ALEX CHENG

Executed on March 13, 2023.



Alex Cheng

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I, Alex Cheng, declare as follows:

I. INTRODUCTION

1. My name is Alex Cheng. I am over twenty-one years old; I am fully competent to make this declaration. I understand that willful false statements and the like are punishable by fine or imprisonment, or both (18 U.S.C. 1001) and may jeopardize the validity of the application or any patent issuing thereon. All statements made of my own knowledge are true and all statements made on information and belief are believed to be true.

2. I have been retained by Patent Owner CloudfChange, LLC (“CloudfChange”) as an independent technical expert.

3. Unless otherwise noted, the statements made herein are based on my personal knowledge, and if called to testify, I would testify competently to the matters contained herein. For my work in connection with this case, I am being compensated at my usual rate of \$525 per hour. My compensation does not depend on the content of my opinion or the outcome of this proceeding.

4. In formulating my opinions, I have relied upon my knowledge, training, and experience in the relevant art. I have knowledge of the facts set forth in this declaration based on my review of these patents and my technical expertise. My review of these patents followed my ordinary practice. I began

by reading the patents themselves and then reviewed their respective prosecution histories.

II. EXPERIENCE AND QUALIFICATIONS

5. My qualifications and publications are listed on the attached copy of my curriculum vitae, which is Appendix A to this declaration.

6. By way of overview, I have a Bachelor's degree in Science from the University of Toronto. I have over 30 years of experience in the field of computers and software development including e-commerce, telecommunications, and information technology.

7. I am currently a consultant providing advice regarding computer technology to: financial, telecommunications, food services, real estate, manufacturing, transportation, retail, and government sectors.

8. I have specific consulting and testifying experience in patent and civil cases regarding POS, call center, e-commerce, financial card transactions, and analysis of IT governance and implementation. A list of the cases on which I have consulted is attached as Appendix B to this declaration.

9. My experience prior to consulting includes an extensive background in POS systems, including POS terminals. In my work at Rogers Cantel, I managed cellular billing system development and later designed and built Wireless POS terminals. At Advantis, that later became IBM Global Network, I supported

numerous retailer POS systems in this IBM/Sears joint venture to resell Sears' POS network infrastructure.

10. I held international leadership positions while at IBM and AT&T that included subscription services and I have overseen multinational staff on projects and services spanning over 50 countries.

11. Further detail on my education, work experience, and the cases in which I have previously given testimony in the past five years is contained in my CV.

III. MATERIALS CONSIDERED

12. In preparing this Declaration, I have reviewed U.S. Patent No. 10,083,012 (the "'012 Patent") and related prosecution history, and Petitioner's Petition for *Inter Partes* Review of U.S. Patent No. 10,083,012. I have also reviewed U.S. Patent No. 9,400,640 (the "'640 Patent") and U.S. Patent No. 11,226,793 (the "'793 Patent"), as well as their complete prosecution history. I also have reviewed the exhibits to the Petition, CloudofChange's Exhibits, and all other documents or materials I refer to in this declaration.

IV. LEGAL STANDARDS

13. I have been instructed that institution of an *inter partes* Review ("IPR") is discretionary and the Board may deny institution under § 325(d) where the petition includes the same or substantially the same prior art or arguments that previously

were presented to the Office. I also have been instructed that the Board addresses § 325(d) by applying a two-part framework: (1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and (2) if either condition of first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.

14. I also have been instructed that the Board looks to the following factors when applying the two-part framework: (a) the similarities and material differences between the asserted art and the prior art involved during examination; (b) the cumulative nature of the asserted art and the prior art evaluated during examination; (c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection; (d) the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art; (e) whether Petitioner has pointed out sufficiently how the Examiner erred in its evaluation of the asserted prior art; and (f) the extent to which additional evidence and facts presented in the Petition warrant reconsideration of prior art or arguments.

15. I have been instructed that patent claims are construed as they would be understood by a person of ordinary skill in the art. I have been instructed that

factors that may be considered in determining level of ordinary skill in the art include: (i) the educational level of the inventor; (ii) type of problems encountered in the art; (iii) prior art solutions to those problems; (iv) rapidity with which innovations are made; (v) sophistication of the technology; and (vi) educational level of active workers in the field. I also have been instructed that not all such factors may be present in every case, and one or more of these or other factors may predominate in a particular case. The opinions stated in this declaration are from the perspective of a person of ordinary skill in the art (“POSITA”).

16. When interpreting claim terms, I have been informed and understand that one must endeavor to employ the perspective of a person of ordinary skill in the relevant art at the time of invention. When interpreting the claims, I understand that the ordinary meaning of the language within the claims should be utilized unless the specification or prosecution history clearly provides reason for applying a different interpretation. In other words if a claim term has a well-known and understood meaning to a person of ordinary skill in the art that meaning should be applied to the claims unless the patentee states a clear and unambiguous alternative meaning that they intend to be in force. I have been informed that any terminology in the preamble that limits the structure of the claimed invention must be treated as a claim limitation.

17. I have been informed that a patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those of ordinary skill in the art about the scope of the invention.

18. I have been informed that, to institute an IPR, Petitioner bears the burden to establish a reasonable likelihood of prevailing with respect to at least one challenged claim. Petitioner has the burden to identify with particularity the evidence that supports the grounds for the challenge to each claim. I have been informed that Petitioner's burden never shifts to CloudofChange.

19. I understand that Petitioner's burden of proof is not satisfied by employing mere conclusory statements. I further understand that obviousness determinations based on conclusory and unsupported statements risks allowing the challenger to use the challenged patent as a roadmap to reconstruct the claimed invention using disparate elements from prior art—*i.e.*, the impermissible *ex post* reasoning and hindsight bias.

20. I have been instructed that obviousness is a question of law premised on underlying issues of fact, all of which must be considered, including: (i) the scope and content of the prior art; (ii) the level of ordinary skill in the art; (iii) the differences between the claimed invention and the prior art; and (iv) secondary

considerations of nonobviousness. I understand that a patent for a claimed invention may not be obtained if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains.

21. I understand that each element of a claim must be disclosed in the prior art references for a claim to be found obvious. I further understand that a patent is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. I further understand that hindsight reconstruction of the claimed invention must be carefully guarded against.

22. I understand that although a problem in the prior art may form the basis of a motivation to combine, Petitioner must demonstrate the alleged problem was known in the art or that Petitioner's formulation of the problem was derived directly from the prior art rather than from the challenged claims. I further understand that defining the problem in terms of its solution reveals improper hindsight in the selection of the prior art relevant to obviousness. I further understand that the rationale must be more than mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.

23. I have been instructed and understand that where each of the references of a purported combination independently accomplish similar functions and operate effectively to achieve their purposes, a POSITA may have no reason to combine the features of those references. I understand that while a prior art reference may support any finding apparent to a person of ordinary skill in the art, prior art references that address different problems may not, depending on the art and circumstances, support an inference that the skilled artisan would consult both of them simultaneously.

24. I understand that the proponent of objective indicia of nonobviousness must establish a nexus between the evidence and the merits of the claimed invention, and that there is no nexus unless the evidence presented is reasonably commensurate with the scope of the claims. I further understand that CloudofChange is entitled to a presumption of nexus when CloudofChange shows that the asserted objective evidence is tied to a specific product and that product embodies the claimed features, and is coextensive with them. I understand that the purpose of the coextensiveness requirement is to ensure that nexus is only presumed when the product tied to the evidence of secondary considerations is the invention disclosed and claimed.

25. I understand that the failure of others to provide a feasible solution to a long-standing problem is probative of nonobviousness. I further understand that establishing a long-felt need first requires objective evidence that an art recognized

problem existed for a long period of time without solution; the long-felt need must not have been satisfied by another before the invention by applicant; and the invention must satisfy the long-felt need.

26. For the '012 Patent, I have assumed the time of the invention is February 5, 2008.

V. ONE OF ORDINARY SKILL IN THE ART

27. For purposes of this declaration, I understand that Petitioner's grounds challenging the patentability of the Challenged Claims of the '012 Patent are based on obviousness. I further understand that Petitioner bears the burden to prove that the Challenged Claims would have been obvious to a person of ordinary skill in the art ("POSITA") at the time of the invention. I further understand that Petitioner's burden of proof cannot be met based on conclusory statements and hindsight bias.

28. In my opinion, a POSITA in the field of the '012 Patent at the time of the effective filing date of the '012 Patent would have a Bachelor of Science in computer science or a related field, and approximately two years of professional experience or equivalent study in the design and development of retail point of sale ("POS") systems, including experience with building POS screens. Additional graduate education could substitute for professional experience, or significant experience in the field could substitute for formal education.

29. In my opinion, Petitioner’s proposed definition of a POSITA does not require any specific experience with retail POS systems—namely building POS screens—that is the subject matter of the ’012 patent.

30. In my opinion, Petitioner’s proposed definition of a POSITA makes experience in “web-based POS systems” optional. That is, a POSITA could have general professional experience in web-based software, yet no experience with the technology, state of the art, and problems particular to the entire field of web-based POS systems at the time of the filing of the ’012 patent. Ex. 2022, p. 15:1-16; 13:12 to 32:16. CloudfChange’s proposed definition of a POSITA remedies this deficiency by including experience or equivalent study in the field of the ’012 patent: retail point of sale POS systems, including experience with building POS screens.

31. Petitioner has provided a declaration of Dr. Todd Mowry (Ex. 1002). In my opinion, under a proper definition of a POSITA that includes experience or additional study in the field of retail point of sale POS systems, including experience with building POS screens, Dr. Todd Mowry is not a POSITA with reference to the ’012 patent. I offer myself as a POSITA on the basis of my direct experience with retail POS systems. In the early 90s, while at Rogers Cantel I designed and built some of the first wireless POS terminals using off the shelf components. Later, I joined Advantis an IBM/Sears joint venture that resold the Sears POS network to other retailers. While there I supported POS networks in use by several retailers and

was involved in the software of IBM outsourced POS systems in use at Sears, Canadian Tire, and Blinds-to-Go. Advantis later became IBM Global Network and was later acquired by AT&T. While at AT&T I was head of the International Custom Engineering Division where among other projects we designed international POS networks. More recently, I have been involved in consulting work where I have been an expert in cases involving retail POS systems. This retail POS system case work has included the review of POS system source code for patent infringement (including, but not limited to Sam's Club, and H-E-B) for servers and POS terminals that were PC, iOS and Android based. In December 2022, I had the opportunity to review source code of POS systems offered by Lightspeed, the Petitioner in IPR2022-00997 (which is the matter Petitioner is seeking to join).

VI. TECHNOLOGY BACKGROUND

32. In 2008, when the parent application that led to the '012 Patent was filed, how POS content was created and implemented was important to the claimed invention. It remains important today. Prior to the '012 Patent, typically each POS vendor had its own proprietary set of technologies and methods in place to create, implement, and manage POS content. POS hardware vendors' business model typically included a services division that produced revenues for the company to create this content for merchants. Additionally, many third parties existed which charged merchants to maintain this content. Accordingly, there were business

reasons in place that provided incentives for companies to make these technologies difficult for merchants to use. As a result, prior to the '012 Patent, POS systems were tethered to in-store servers and required expensive and time-consuming manual software for store and restaurant owners to make even minor changes to menu items or product offerings. Historically, “only specially trained people” could build or change these POS systems, which were still “difficult” and “prone to error” leading store owners “to retain older, inaccurate, out-of-date POS screens in order to avoid the POS screen editing process.” EX1001, 1:43-49. The patented invention, a web-based POS builder system, eliminated these challenges by providing an inexpensive and efficient method for “assist[ing] non-expert business operators in building, editing and testing a [POS] system to manage their businesses” while simultaneously removing the requirement of purchasing and maintaining on site computer servers for POS systems. *Id.*, Abstract, 5:56-58.

33. “Web-based” technologies started to take hold in the mid-to-late 2000s when wide-spread adoption started taking place. Prior to this time, legacy technologies—mainframes and client/server technologies—were the most predominant and the legacy computing style was typically centralized and proprietary. Most POS vendors managed POS content using a large, centralized computer with connected remote computers, all under a proprietary connection. Outside of the POS industry, “web-based” technologies began to sever this link and

allowed for open source (generally free, standardized technology stacks) as well as standardized computing languages that allowed for an expanded pool of resources and benefits for lay persons.

34. In contrast to the legacy computing environment, with private, proprietary connections, the Internet (web-based) allowed for more open, more prolific, and more standardized connectivity. This connectivity enabled what is now called the “Cloud.” While “cloud” based technology is prolific in today’s computing environment, tactical application of cloud computing was in its formative stages in the mid-to-late 2000s. The term itself had not proliferated widely, but the use of the underlying technologies for the business model of Software as a Service (SaaS) and “Hosted” solutions were becoming common in the mid to late 2000s. Simply put, Cloud computing is a computing style in which the actual computations or data is location agnostic.

35. Additionally, in February 2008, developers and maintainers of POS systems were struggling to find solutions to problems related to access management, application security, and encryption. EX1001, 4:50-58. Access management (login and password), application security (segregated database instances), and encryption are well known requirements for web servers. These requirements are documented in the ’012 Patent specification to describe the web server of the Patent.

36. By February 2008, numerous security breaches had been reported by

the press. One of the largest was the exposure of over 45 million payment card numbers stored in the POS system of TJ Maxx. Ex. 2017. Due to data breaches, by February 2008, to maintain consumer trust in the use of credit and debit cards, the Payment Card Industry Data Security Standard (“PCI DSS”) was established by Visa, MasterCard, Discover Financial Services, JCB International and American Express. PCI DSS compliance by June 30, 2007 would grant safe harbor for retailers from fines of \$500,000 per breach. EX2018. In turn, this would require providers of POS systems and services to be PCI DSS compliant as well. Even with the motivation to avoid the risk of stiff fines, a 2007 Forrester Research survey revealed that only 60 percent of US respondents planned to be PCI DSS compliant by the end of 2008. The three largest reasons for the delay were identified as access management, application security and encryption. EX2019. These problems proved to be so severe that by 2010, it was reported that PCI compliance from 2007 to 2009 only rose from 46% to 51%. North American organizations are still not where they should be, and the level of PCI compliance in Europe is especially poor.” EX2020. Consequently, in February 2008, a POSITA would be strongly motivated away from solutions that introduce requirements for access management, application security and encryption.

VII. OVERVIEW OF THE '012 PATENT

37. The '012 Patent titled “WEB-BASED POINT OF SALE BUILDER,”

has a priority date of February 5, 2008. Ex. 1001, 1. The field of art of the '012 Patent is retail point of sale POS systems, including building POS screens.

38. On February 5, 2008, the inventors filed U.S. Patent Application Serial No. 12/012,666 (“the '666 Application”). The '666 Application was published on August 6, 2009, as U.S. Patent Publication No. 2009/0199154 A1 and issued on July 26, 2016, as the '640 Patent, which is the grandparent patent to the '012 Patent. On June 27, 2017, CloudfChange filed U.S. Patent Application No. 15/635,097 (“the '097 Application”). The '097 Application published on October 19, 2017 as U.S. Patent Publication No. 2017/0300301 and issued on September 25, 2018 as the '012 Patent, which is the subject of this proceeding. The '097 Application is a continuation of U.S. Patent Application No. 15/198,117 filed on June 30, 2016 and issued as U.S. Patent No. 9,715,371 on July 25, 2017, which is itself a continuation of U.S. Patent Application No. 12/012,666, filed February 5, 2008, and issued as the '640 Patent.

39. The '640 Patent and its children, including the '012 Patent, involves technology for systems, services, and products for POS systems to manage business operations. *Id.*, 1:20-22. The technology includes “a method for online, web-based point of sale (POS) building and configuration, which can assist non-expert business operators in assembling a point of sale system to manage their businesses” and whose operation “can range from a single branch to a large chain of stores or

branches.” *Id.*, Abstract. The ’012 Patent states, and illustrates in Figure 3, that “[t]he key advantages of the Web-based POS builder are that it is completely built on the foundation of the Web.” *Id.*, 5:39-40.

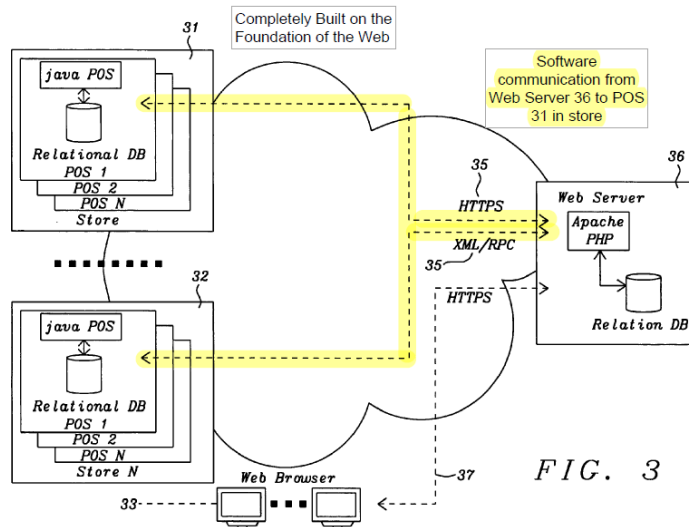


FIG. 3

Ex. 1001, Fig. 3 (annotated).

40. Independent Claims 1 and 14, which are in different statutory classes—
system and method, are reproduced below:

1. A web-based point of sale (POS) builder **system** comprising:

a web server including POS builder software installed thereon;

one or more POS terminals generated by said POS builder software and said one or more POS terminals configured to be accessible at one or more terminal devices, said POS terminals

configured to accept POS transactions and collect corresponding transaction data; and

a POS builder interface configured to be accessible via network communication with said web server over a communications network;

wherein said POS builder interface is configured to be utilized to access said POS builder software for programmatically creating or modifying said one or more POS terminals in real time over the communications network, wherein said POS builder software is configured to interact with said one or more POS terminals over the communications network in order for the web-based point of sale (POS) builder system to perform functions in accordance with instructions sent from the POS builder interface;

wherein said POS transactions and corresponding transaction data from said one or more POS terminals are configured to be transmitted to said web server via the communications network; and

wherein each POS transaction is correlated with corresponding transaction data occurring at said one or more POS terminals.

Ex. 1001, Claim 1 (emphasis added).

14. A **method** of implementing a web-based point of sale (POS) builder system, said web-based point of sale (POS) builder system comprising a network-accessible web server including POS builder software installed thereon, the method comprising:

providing access to said network-accessible web server by one or more POS terminals, said one or more POS terminals generated from instructions communicated from said POS builder software to respective one or more terminal devices;

accepting POS transactions via said one or more POS terminals;

collecting transaction data corresponding to transactions

occurring at said one or more POS terminals; and

providing further access to said network-accessible web server by a POS builder interface via a communications network, said POS builder software configured to programmatically create or modify said one or more POS terminals in real time over the communications network;

wherein said POS builder software interacts with said one or more POS terminals over said communications network in order for the web-based point of sale (POS) builder system to perform functions in accordance with instructions sent from the POS builder interface;

wherein said POS transactions and corresponding transaction data from said one or more POS terminals are transmitted to said network-accessible web server via a network connection; and

wherein each POS transaction is correlated with corresponding transaction data occurring at said one or more POS terminals.

Ex. 1001, Claim 14 (emphasis added).

41. **Prosecution History:** The application for the '012 patent was filed June 27, 2017. The Application is a continuation of U.S. Patent Application No. 15/198,117 filed on June 30, 2016 and issued as U.S. Patent No. 9,715,371 on July 25, 2017, which is itself a continuation of U.S. Patent Application No. 12/012,666 filed February 5, 2008 and issued as the '640 Patent on July 26, 2016.

42. I understand that, during prosecution, *Olson* (U.S. App. No. 11/710,722) was disclosed in an Information Disclosure Statement ("IDS") on June 27, 2017. Ex. 1003, 168-70. On August 25, 2018, the Examiner signed the

IDS and initialed the IDS indicating that the Examiner considered *Olson*: “ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /R.M./”.

Ex. 1003, 4.

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ¹
	12	Co-pending US Patent TY06-001, Serial No. 11/710,722, File date: February 26, 2007, “Point of Sale System with Web-Based Back-Office,” by Quentin Olson, 25 pgs.	
	13	Co-pending US Patent TY06-002, Serial No. 11/710,723, File date: February 26, 2007, “Point of sale Video Server Processing System,” by Quentin Olson et al., 24 pgs.	
	14	Co-pending US Patent TY06-003, Serial No. 12/012,393, File date: February 1, 2008, “Hand-Held Web Browser Inventory Checking System,” by Quentin Olson et al., 24 pgs.	
	15	Localsoft Tech, db2k e-Store Builder 3.00 details, 3 pgs, found 02/08/2008, http://www.soft32download.com/software/dbk-e-Store-Builder-download-details.html	
	16	IBM 4690 ASTRA – Graphical User Interface (GUI) – Specifications, 1 pg., found 02/08/2008, http://www.03.ibm.com/products/retail/products/software/gui/astra/specs.html	

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Examiner Signature	/ROKIB MASUD/	Date Considered	08/25/2018
*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

T¹ - Place a check mark in this area when an English language Translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /R.M./

43. **Litigation History:** I understand that the '012 Patent was previously involved in a lawsuit *CloudfogChange, LLC v. NCR Corporation*, 6-19-cv-00513 (W.D. Tex. Aug. 30, 2019) (“the NCR Litigation”), which resulted in a jury verdict holding that Claims 1-4 of the '012 Patent were infringed and Claims 1-4 and 9 of the '012 Patent are not invalid. Ex. 2008 (Dkt. 159, Jury Verdict). The Jury in the NCR Litigation expressly rejected invalidity arguments based on *Woycik*. Ex. 2008; Ex. 2009, 56-57, and 100-102; Ex. 2010, 243-300; and Ex. 2011, 126-132, 137-139, 144-147, 152-153, 225-227, 245-246, and 254.

44. I understand that Patent Owner has filed a lawsuit against Petitioner Clover Network, Inc., on June 17, 2022, asserting the '012 Patent, '640 Patent, and '793 Patent. *See CludofChange, LLC v. Clover Network, Inc.*, No. 6:22-cv-00634 (W.D. Tex. Jun. 17, 2022) (the “Clover Litigation”).

45. I further understand that on October 22, 2021, Patent Owner filed a lawsuit against Lightspeed for infringement of two patents in the United States District Court for the Western District of Texas, Waco Division (“WDTX”). *See CludofChange, LLC v. Lightspeed POS Inc.*, Case No. 6:21-cv-01102. On May 2, 2022, Patent Owner amended the complaint to allege infringement of a third patent, U.S. Patent No. 11,226,793 (“the '793 Patent”).

VIII. CLAIM CONSTRUCTION

48. I understand that claim terms are afforded their ordinary and customary meaning which is the meaning that the term would have to a POSITA in question at the time of the invention. I understand that, in related litigation, the Western District of Texas (WDTX) construed the following terms:

Claim Term	Court’s Construction in the Lightspeed Litigation EX2021	Court’s Construction in the NCR Litigation EX1024; EX1025
“terminal device”	Plain and ordinary meaning	--

Claim Term	Court's Construction in the Lightspeed Litigation EX2021	Court's Construction in the NCR Litigation EX1024; EX1025
“web-based point of sale (POS) builder system”	--	“a point of sale (POS) builder system that requires the internet”
“point of sale terminal[s]”	Plain and ordinary meaning	Plain and ordinary meaning
“a web server”	--	“hardware and software that uses HTTP (hypertext transfer protocol) to serve data or files that form web pages” Under the Court's construction, HTTP includes the insecure and secure versions of HTTP, <i>i.e.</i> , HTTP and HTTPS.
“point of sale builder software”	Plain and ordinary meaning, wherein plain and ordinary meaning means “software that builds the POS terminals”	Plain and ordinary meaning, wherein plain and ordinary meaning means “software that builds the POS terminals”
“programmatically creating or modifying said one or more POS terminals in real time”	--	Plain and ordinary meaning
“generated by said POS builder software”	--	Plain and ordinary meaning
“POS builder interface”	--	Plain and ordinary meaning, wherein plain and ordinary meaning means “an interface to the POS builder software”

Claim Term	Court's Construction in the Lightspeed Litigation EX2021	Court's Construction in the NCR Litigation EX1024; EX1025
"configured to be utilized to access said POS builder software for programmatically creating or modifying said one or more POS terminals in real time"	--	Plain and ordinary meaning

EX1024; EX1025, EX2021.

49. For the purposes of this declaration I have used Judge Albright's final constructions in the NCR Litigation and Lightspeed Litigation.

50. **"a web-based point of sale (POS) builder system:"** Additionally, in my opinion, the preambles of Claims 1 and 14 are limiting, and "a web-based point of sale (POS) builder system" is properly construed as "a point of sale (POS) builder system that requires the internet," consistent with Judge Albright's final construction in the NCR Litigation. The preamble of both Claims 1 and 14 recites "a web-based point of sale (POS) builder system." The WDTX correctly construed the preamble as "a point of sale (POS) builder system that requires the internet." EX1024, 1.

51. The preamble is necessary in the body of Claims 1 and 14. Here, the body of Claim 1 recites "the web-based point of sale (POS) builder system," with antecedent in the preamble. EX1001, col. 6:42-47. Claim 14 recites a nearly identical element. *Id.*, 8:9-14.

52. Additionally, the "web-based" nature of the POS builder system is

indicated as important by the specification. The '012 Patent states: “this invention relates to an online, web-based point of sale builder method....” EX1001, 1:24-25. “The key advantages of the Web-based POS builder are that it is completely built on the foundation of the Web.” *Id.*, 5:39-40.

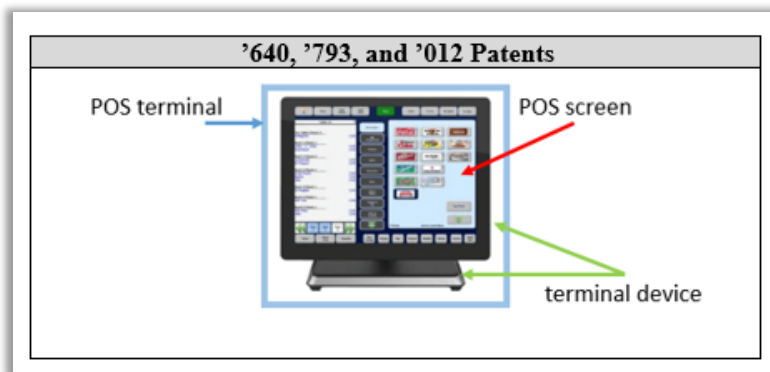
53. As such, the preambles of Claims 1 and 14 are limiting, and “a web-based point of sale (POS) builder system” should be construed as “a point of sale (POS) builder system that requires the internet.”

54. **“communications network” (all claims)** Petitioner argues that the term “communications network” “should be given its ordinary meaning—*i.e.*, a group of devices interconnected by communication channels” and should not be limited to a particular protocol. Petition, 9-10. I understand that CloudfChange believes that no construction is necessary beyond the plain and ordinary meaning, CloudfChange does not dispute Petitioner’s construction at this stage in the proceeding. I reserve the right to address claim construction.

55. **“POS terminal”** I understand that in a footnote, Petitioner seems to argue that term “POS terminal” used in the '012 Patent has a different meaning that “POS terminal” used in the '640 Patent. Petition, 9 n.4. This is not the case. In my opinion, the terms mean just what the plain language says, namely point of sale terminals. Ex. 1001, *passim*. While I believe that no construction is necessary beyond the plain and ordinary meaning, I dispute Petitioner’s “context” for

describing what the term “POS terminal” means in reference to the ’012 Patent claims and the ’640 Patent claims. I further reserves the right to address claim construction, in the unlikely event that trial is instituted.

56. In my opinion, rather than POS modifying terminal, “terminal” modifies “device” in the term “terminal device” in Claim 1 of the ’012 Patent, the “device” in “terminal device” is the hardware portion of the “POS terminal.” Ex. 1001, Claim 1. This is consistent with the WDTX construction in the NCR Litigation. I understand that the Court construed “point of sale terminals” used in Claims 1-4 and 6-10 of the ’012 Patent and Claims 1, 2, 4 of the ’640 Patent to have the same plain and ordinary meaning. EX1024; EX1025.



57. Petitioner argues that the terms have different meaning, ignoring the claim language in each of the Asserted Patents that is consistently used throughout and defined in the specification. In my opinion, the ’640 Patent claims do not claim a “terminal device.” Therefore, the term “POS terminals” should have the plain and

ordinary meaning which includes, at least, the hardware and software portion of the POS terminal.

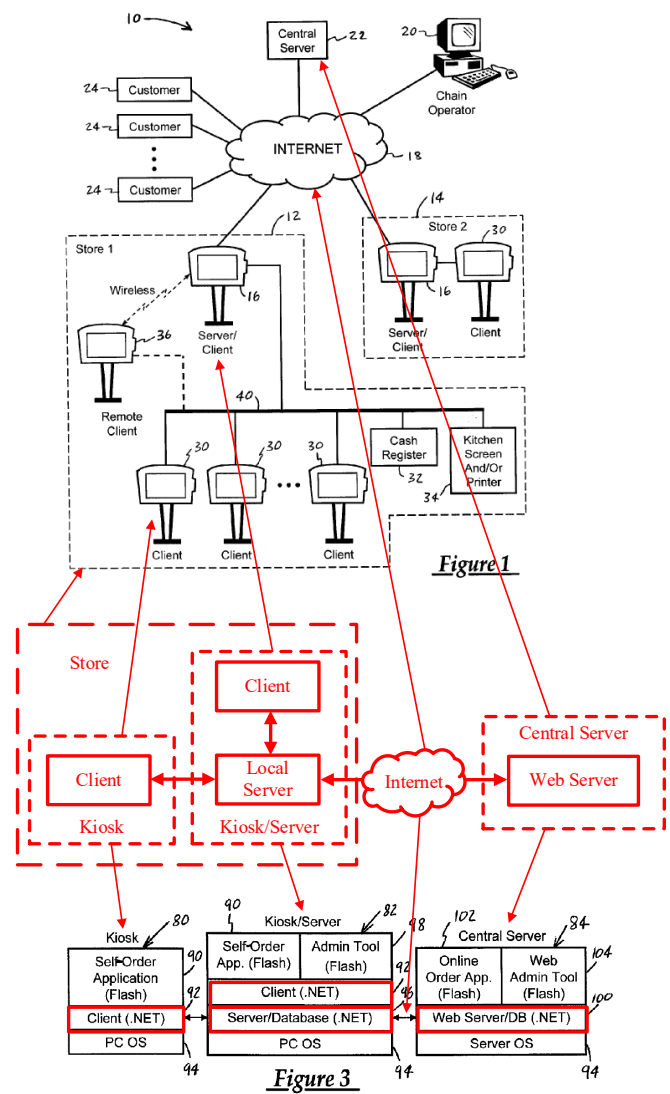
IX. BRIEF OVERVIEW OF *WOYCIK*, *OLSON*, and *TENGLER*

A. *Woycik* (Ex. 1004)

51. *Woycik* is titled “Computer-based ordering system.” Ex. 1004, Title. *Woycik* is directed to a “computer-based ordering system for ordering goods and services.” EX1004, Abstract. A “self-service ordering system 10 constructed in accordance with the invention” includes store locations “each having a plurality of kiosks arranged in a client-server configuration.” EX1004, [0071]. In addition to standalone kiosks, each store includes a local server that is on-site, and may be a standalone server or a joint server/kiosk. EX1004, [0071] (“In general, a single store location will include at least one local server 16 and at least one client kiosk 30.”). In other words, *Woycik* teaches an on-premises server requirements and does not contain a system hosted over the Internet (*i.e.*, it is not a system requiring the Internet). Such kiosks may be used by customers to order food that is available at the store location using a self-order application. EX1004, [0072]. *Woycik* expressly identifies the local server as an “advantage”: “The local server kiosk ... An advantage of this approach is that it enables administrators and store owners to make changes to the store offerings and customer interface without requiring any knowledge of the underlying code.” *Id.*, [0095]. The kiosks and local servers can

communicate via a local area network. *Id.*, [0074]. In contrast, the POS is disclosed as connected to the Internet, but only for credit card payments. EX1004, [0074]

52. An annotated version of Figures 1 and 3 of *Woycik* follows:



53. In addition to the self-order application, *Woycik* discloses an

administrative tool that can be installed to run locally on a server kiosk that is in the store, or remotely to access the local version of the administrative tool installed in-store on the server kiosk. EX1004, [0073], [0095]. The administrative tool can “perform various administrative functions such as configuring kiosks, creating and editing menus and available food items, and specifying tax and payment features of the system.” EX1004, [0073]. The administrative tool “provides an administrative user interface to the client program” and can be run from a local client “by loading the administrative tool on each client computer 30.” EX1004, [0073].

54. In addition to running on the server kiosks, the administrative tool may be loaded on remote computers to administer and update the in-store servers. EX1004, [0075] (“Remote access also allows the chain operator 20 to remotely run the administrative tool”). *Woycik* notes that this remote access of the in-store servers “can be done several ways,” including via loading the tool on a remote computer to “update the local server 16,” loading the tool on a central server that “accesses and stores updated configuration information on the local server 16,” or using a “web interface to the administrative tool on the local server 16.” EX1004, [0075]. In each different version of the administrative tool, the tool is used to update the configuration information at the in-store server 16. EX1004, [0075].

B. *Olson* (Ex. 1006)

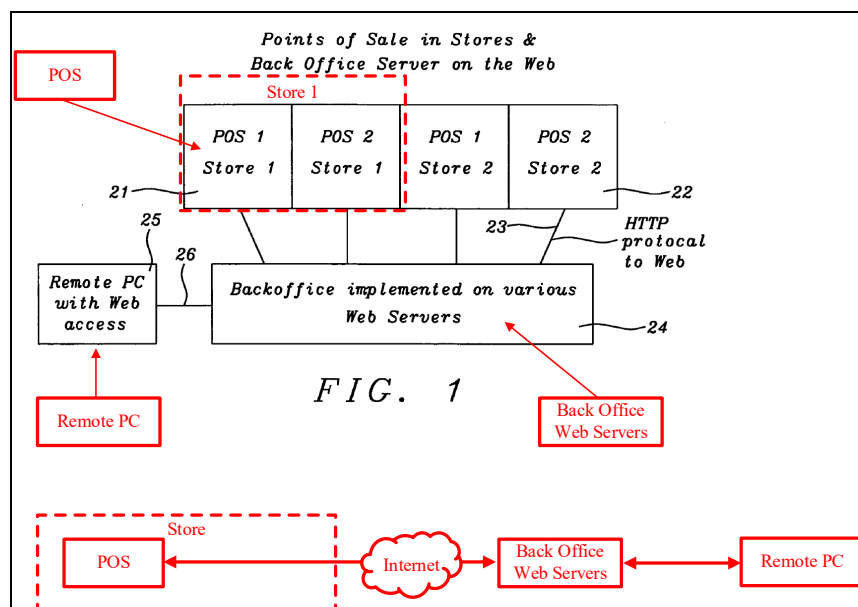
55. *Olson* is titled POINT OF SALE SYSTEM WITH WEB-BASED

BACK-OFFICE. EX1006, 1. The inventor is Quentin *Olson* who, along with Wayne Baratta, is a co-inventor of the '012 Patent. EX1001, 1. Additionally, *Olson* is incorporated by reference into the '012 Patent. EX1001, 8 (“This application is related to... Ser. No. 11,710,722 ... [and is] incorporated by reference in its entirety.”).

56. *Olson* states that “[i]t is the objective of this invention to provide a system and a method for a system and an apparatus for managing a range of businesses,” including the “business operations” of one or more stores. EX1006 [0010]. In particular, *Olson* specifies that the “invention relates to the managing of the points of sale (POS) with Web-based back-office systems.” EX1006 [0010]. A POSITA would have generally understood back-office systems to be the systems supporting activity necessary for the running of the business removed from and unseen by a customer receiving direct contact at the POS (the front-office systems). Examples of business activities supported by the back-office include finance, logistics, distribution, manufacturing, marketing, sales, inventory, management, security, loss prevention, and human resources. *Id.*

57. Figure 1 of *Olson* (see below) illustrates a “high level diagram of this invention.” EX1006 [0017]. The architecture of *Olson* employs one or more POS terminals 21/22 in each store. EX1006 [0017]. Each POS normally operates with a connection 23 via the internet to a back office 24, but this is a “loose coupling” and

the connection is “not required for the basic business functions of the POS.” EX1006 [0017].



EX1006, FIG. 1 (annotated).

58. Each POS of *Olson* (a “POS terminal 10”) includes a core transaction Engine 20 that is “software which processes all input and output at the POS terminal and invokes the appropriate retail logic.” EX1006 [0021]. The core transaction engine interfaces with a number of configurable modules 30 that define the functions (“the meaning and processing”) of keys of the terminal. EX1006 [0021]-[0022]. Examples of the configurable modules implementing different POS terminal functions include a “Total key” module, “Cash Tender module,” and “Sub-Total module.” EX1006 [0021]-[0022]. The configurable 400 modules are “preferably

implemented in a computer language such as JAVA,” allowing for the modules to be changed via updates to the programming of the module, for example using “a JAVA-type object-oriented language.” EX1006 [0021]-[0024]. Specifically, *Olson* provides that if an end user of the POS wants to modify how a key operates, modification of the JAVA programming is needed, and the “event model” used is “familiar to most GUI application programmers.” EX1006, [0024].

59. During operation, the POS stores data generated from transactions in a relational database at the POS. EX1006, [0017], [0025]. The POS then periodically uploads this transaction data to the BO via the BO interface. EX1006, [0017]-[0019]. The BO may then store the transaction data from the POS in another relational database at the BO. EX1006, [0025]-[0026]. If the BO is not accessible, the POS may continue to operate, storing transaction data and attempting to transmit the transaction data to the BO once the BO is accessible. EX1006 [0019]. A POS may also request updates from the BO, “such as new items, price changes, employees, etc.” EX1006 [0019].

C. *Tengler* (Ex. 1005)

60. *Tengler* is titled ORDER PROCESSING and is directed to order processing for goods or services. EX1005, [0048]. The “commercial context in which orders for goods or services are processed” in *Tengler* includes a “quick-serve restaurant,” that “uses restaurant management software and a database to manage

the placing of orders, the entry of orders, the preparation of the food..., and the assembly and delivery of the orders,....” EX1005, [0049]. FIG. 14 and FIG. 15 illustrate the software architecture of *Tengler’s* restaurant management software, which includes a local server (RMS system server 604), web server (store-resident web server 620), and one or more registers and/or kiosks:

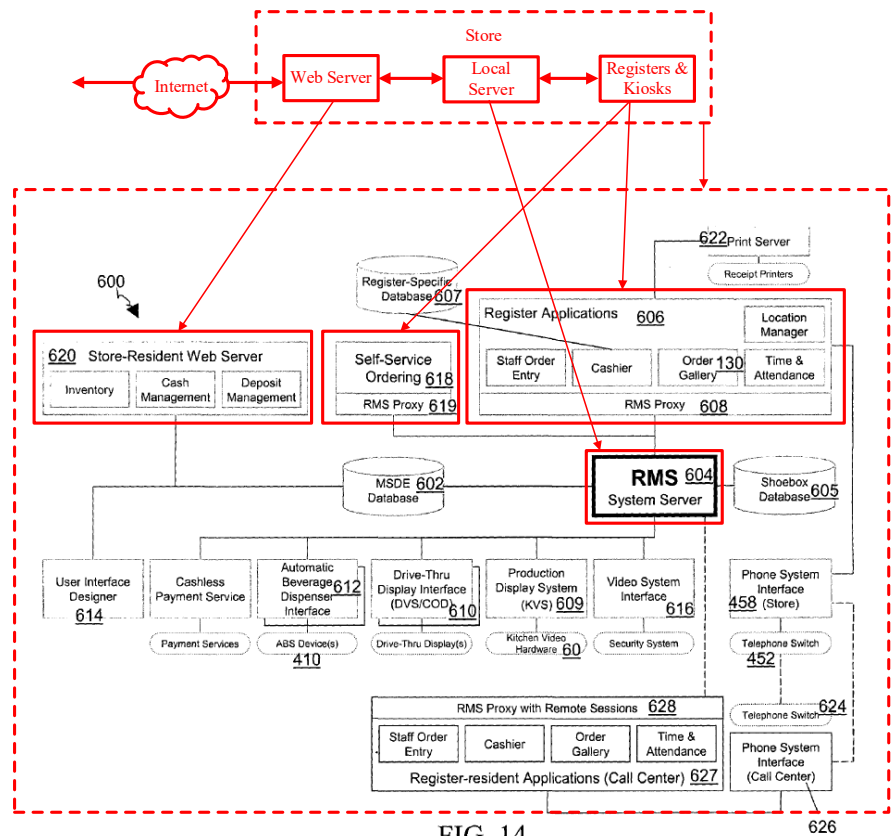


FIG. 14

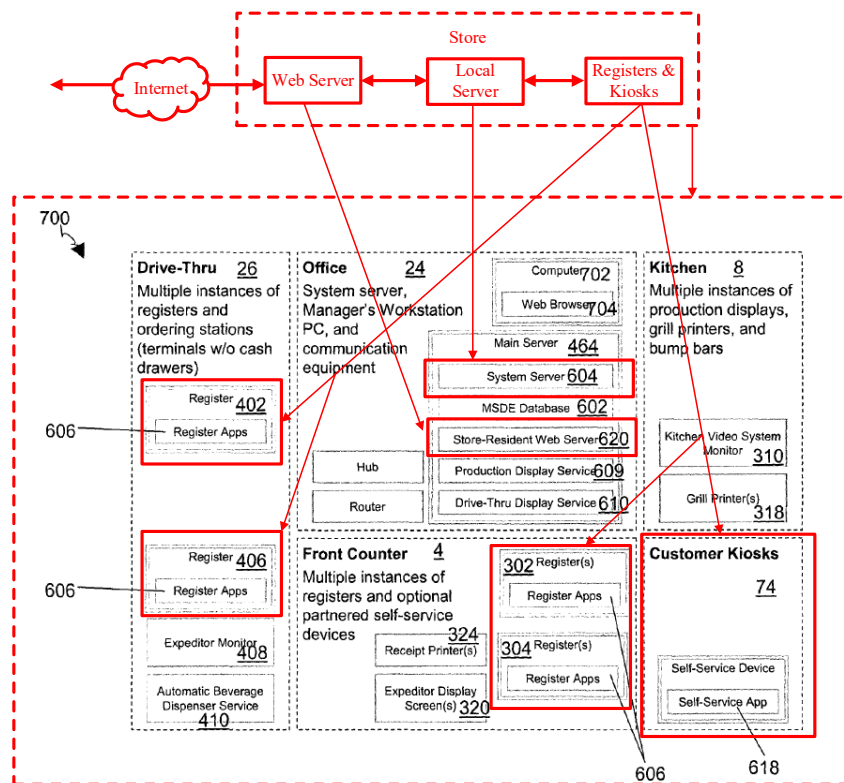


FIG. 15

EX1005, FIGs. 14, 15.

61. The store of *Tengler* has a main server that includes both an in-store server for the local, in-store devices, as well as a web server to provide access allowing management to view status within the store. *See, e.g.*, EX1005, [0116] (“main server computer 464 runs the system server software 604, the database 602, the store-resident web server software 620”). “The server 604 stores restaurant status and order status information for local viewing at registers, stations, terminals, and other devices connected to a local area network.” EX1005, [0088]. The in-

store, local server (RMS system server 604) is consistently described by *Tengler* as central to communications with and between in-store devices, and necessary to support in-store functions and status-keeping. *See, e.g.*, EX1005, [0088] (“server **604** stores restaurant status”), [0095] (“RMS server **604** keeps restaurant system status, receives order updates from the stations..., broadcasts order status changes to the stations..., updates the database **602** and the shoebox database as required, supports shared cashless payment methods..., and synchronizes [between databases]”). The “store-resident web server **620** enables external managers to view restaurant status information....” *Tengler* also provides that managers can “edit the user interface of the register and self-service applications and also save the specifications in the database **602**.” EX1005, [0103]. The web server provides access “from off-site (such as the manager’s home or a central corporation office).” EX1005, [0103].

X. REVIEW OF PETITIONER’S INVALIDITY GROUNDS

58. None of the prior art references teach “web-based point of sale (POS) builder system,” “a web server including POS builder software installed thereon,” “a POS builder interface configured to be accessible via network communication with said web server over a communications network,” and “said POS builder interface is configured to be utilized to access said POS builder software.” Ex. 1001, Claim 1. In my opinion, each of the Grounds identified in the Petition fails to

demonstrate that there is a reasonable likelihood that Petitioner would prevail as to at least one of the claims challenged. I understand that Petitioner has the burden of demonstrating unpatentability by the preponderance of the evidence, and it must identify and explain how the asserted prior art satisfies each element of the claims and how the claims are to be construed.

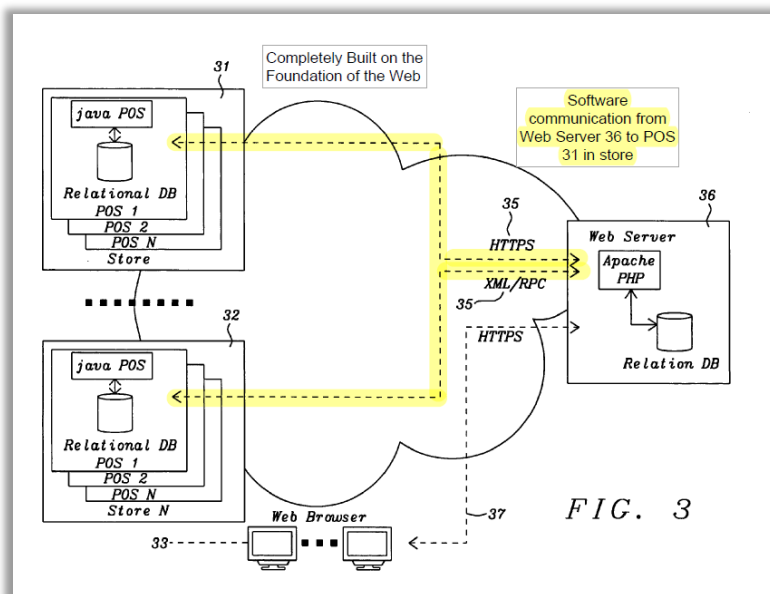
A. Ground 1

59. In my opinion, Ground 1 also fails because the Petition fails to demonstrate that *Woycik* discloses a “web-based point of sale (POS) builder system,” “a web server including POS builder software installed thereon” and “a POS builder interface configured to be accessible via network communication with said web server over a communications network.” EX1001, Claim 1. Also, the Petition fails to demonstrate that *Woycik* discloses features recited in Claims 2-20. Further, Petitioner fails to show that the purported knowledge of a POSITA cures these deficiencies.

60. In my opinion, Petitioner misconstrues *Woycik* to avoid the novel and nonobvious features of the claimed invention. The claimed technology includes “a method for online, web-based point of sale (POS) building and configuration, which can assist non-expert business operators in building, editing and testing a point of sale system to manage their businesses” that can “range from a single branch to a large chain of stores or branches.” EX1001, Abstract. “The key advantages of the

Web-based POS builder are that it is completely built on the foundation of the Web.”

Id.

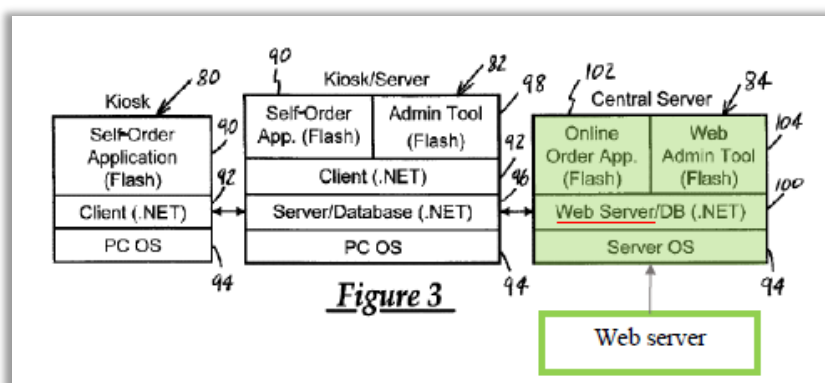


Ex. 1001, Fig. 3 (annotated)

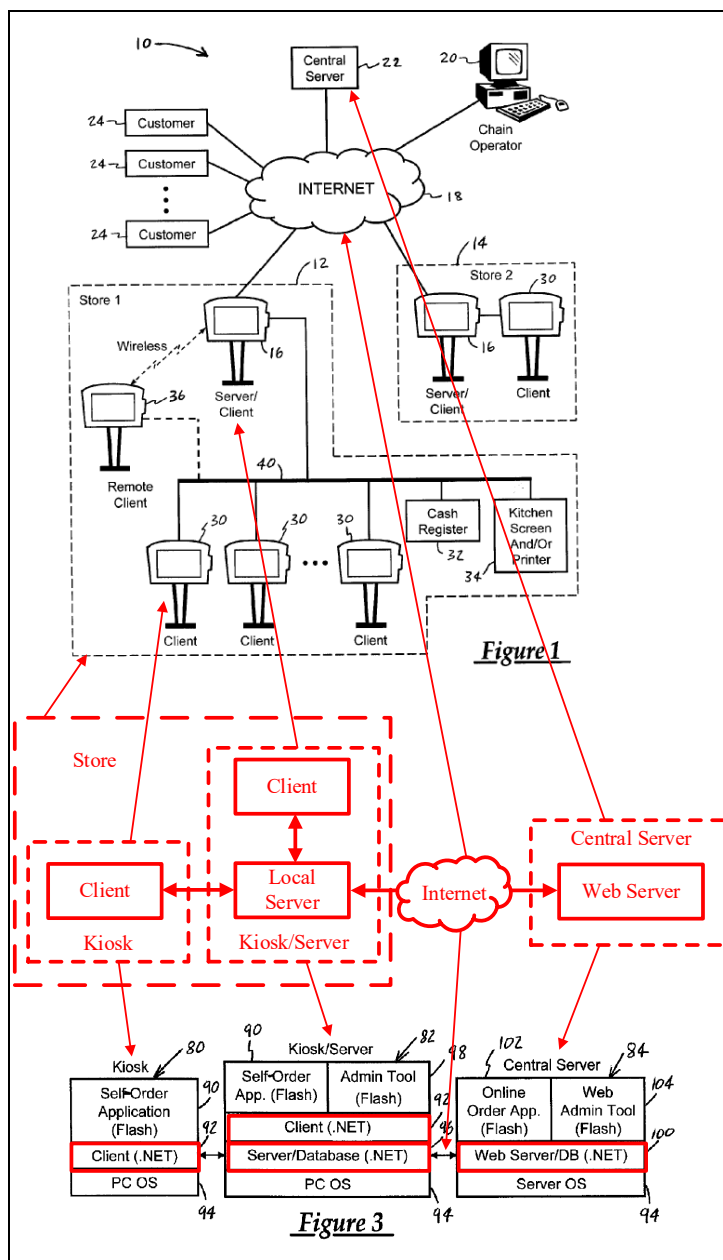
61. In contrast, the system described in *Woycik* requires a local server that is on-site in each store. EX1004, [0071] (“In general, a single store location will include at least one local server 16 and at least one client kiosk 30.”).

62. In my opinion, Petitioner and Dr. Mowry’s fundamental misunderstanding of the claimed technology is shown in the annotated Figure 3 drawing from Dr. Mowry’s declaration. Unlike the claimed technology, which communicates directly from the web server to the POS system located in the store, *Woycik*’s system and software communicates from the central server 84 to the in-

store local server 82 to the kiosk 80. EX1004, Fig. 3. As shown in Figure 3, central server 84 does not communicate to kiosk 80 via the internet. Dr. Mowry fundamentally misrepresents the role, functionality, and “advantages” of the local server described and claimed in *Woycik*. *Id.*, [0095]. The functionality and advantage of the system described by *Woycik* is the local server 82 which communicates with central server 84. In fact, as shown in the annotations to Figure 1 and Figure 3 of *Woycik*, local kiosk 80 communicates with local server 82 via LAN 40, and never communicates directly with central server 84. *Id.*; EX1004, Figs. 1 and 3 (annotated).



EX1002, 80.



EX1004, Figs. 1 and 3 (annotated).

63. In my opinion, the definition of a POSITA proposed by Petitioner does

not include any requirement of expertise in software as a subscription (SAAS) and its associated business model. SAAS requires additional effort and expertise (e.g., billing system, legal expertise) to implement, which would discourage a POSITA using the system of *Woycik* from implementing SAAS with that system.

1. Independent Claims 1 and 14

64. In my opinion, *Woycik* does not disclose a “web-based point of sale (POS) builder system” at least because *Woycik* requires an in-store server and does not require the Internet. Like the prior art before the ’012 Patent, *Woycik* requires a server at each store. Referring to Figure 1, *Woycik* states: “In general, a single store location will include at least one local server 16 and at least one client kiosk 30.” EX1005, [0071]. In fact, each embodiment in *Woycik* has a local server in the store, including the “local server kiosk” that “includes an administrative tool.” EX1005, [0095]. In some cases, a “server kiosk” (EX1005, [0095]) may function as a “local server” for the other kiosks in the store, such that “one of the kiosks 16 is used both as a client to permit customer entry of orders and as the local server....” EX1005, [0072]. In the case of the computer of the server kiosk, the client portion of the server kiosk and the server portion of the server kiosk have independent roles: “This is accomplished by providing separate client and server software both on a single one of the kiosks 16.” EX1005, [0072].

65. *Woycik* does not disclose any POS builder software running on a web

server. Rather, like other systems before the '012 Patent, *Woycik* relies on in-store servers to run its deficient computer-based ordering system, and not a web server running POS software. In one example, *Woycik* describes that “the configuration data for the kiosks, menus, and items can be stored on the server kiosk 16, 82 and downloaded to the client kiosk 30, 80.” EX1005, [0095]. As another example, when changes are made using the administrative tool, “[a]ll media and configurations of menus, items and options are saved on the server kiosk,” which is in-store. EX1005, [0115]. In a third example, when media updates for the kiosks are to be made, “[t]he new media can be placed on the server kiosk and then pushed to the client kiosks, or the clients can periodically check for new media.... Using this approach, the server updates the clients by storing the media in a media folder on each client.” EX1005, [0115]. In each case, local kiosks rely and are dependent on the local server to operate.

66. Each of Figures 23, 24, and 25 of *Woycik* illustrate examples of *Woycik*'s reliance on an in-store, local server (server of the server kiosk 16, 82), even when a client receives communications from the central server; Figure 3 illustrates the components referenced in Figures 23, 24, and 25:

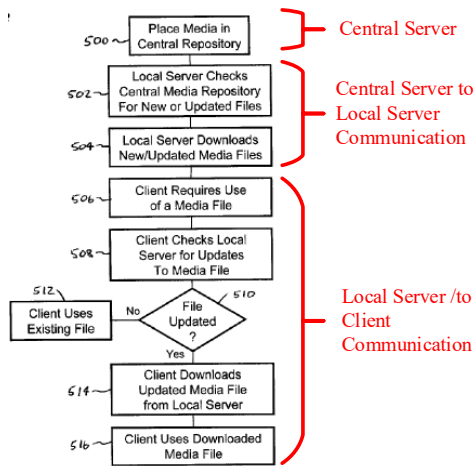


Figure 23

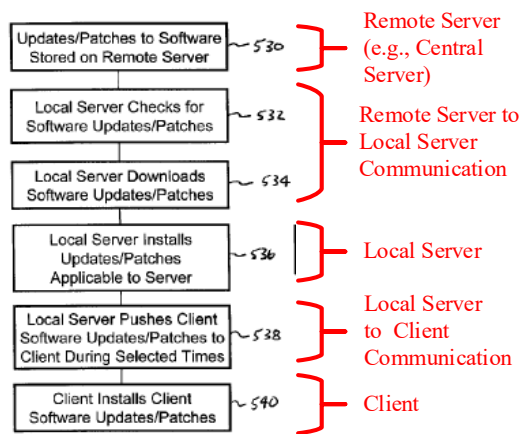


Figure 24

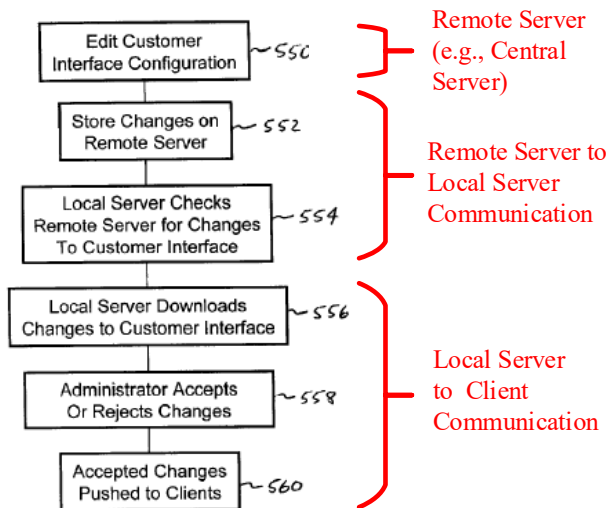


Figure 25

67. In each example, the local server of the server kiosk acts as the middleman for all communications: the “remote server such as the central server 22 of FIG. 1” (EX1005, [0117]) communicates only with the local server, while the

client likewise only communicates with the local server (and not the remote server, which has the web server).

68. Therefore, in my opinion, *Woycik* does not disclose a “web-based point of sale (POS) builder system” as recited in Claim 1.

69. In my opinion, *Woycik* also does not disclose “a web server including POS builder software installed thereon” at least because *Woycik* does not teach (or even mention) POS builder software, let alone POS builder software that runs on the web server of a web-based POS system. Rather than teaching POS builder software hosted on a web server, or POS builder software requiring the Internet, *Woycik* teaches a local version of its administrative tool that runs on a server kiosk (the in-store server) that serves the other kiosks in the store, and a remote version of its administrative tool that runs on the central server and works with the local version of the administrative tool to configure the server kiosk. At the time of *Woycik*, such kiosks and servers required specialized personnel to implement customizations.

70. First, and fatally for Petitioner, *Woycik* does not mention or refer to “POS builder software” “builder software” or a “builder,” let alone such builder running on a web server. EX1005, *passim*.

71. Second, for the local version of the administrative tool, *Woycik* states that its “administrative tool 98” is “used on the kiosks” in the store. EX1005, [0082]. Specifically, the local version of the administrative tool runs on the server kiosk.

EX1005, [0095] (“The local server kiosk (16, FIG. 1; 82, FIG. 3) includes an administrative tool (98, FIG. 3).”). The administrative tool 98 is used to configure the server program of the server kiosk. EX1005, [0079]. Each embodiment of *Woycik* includes at least the local version of the administrative tool. EX1005, [0075], [0079], Figure 3.

72. For the remote version, the administrative tool is merely used to provide access to the local version of the administrative tool running on the server kiosk for configuration of the server kiosk (which is a local, in-store server). EX1005, [0075]. As such, *Woycik* teaches using the remote version of the administrative tool to save configuration information to the local version, and thus to the in-store server of the server kiosk. EX1005, [0075].

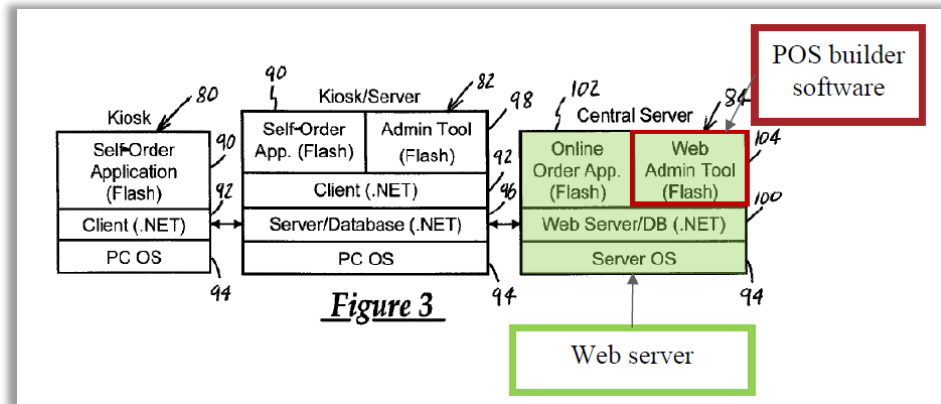
73. Whichever version of the administrative tool that is used—whether running locally, or locally with remote access—*Woycik* teaches that the local administrative tool configures the server kiosk. The configured server software at the server kiosk can then communicate with the separate kiosks (the clients) that are located in-store with the server kiosk.

74. Therefore, in my opinion, *Woycik* fails to disclose “a web server including POS builder software installed thereon.”

75. In my opinion, *Woycik* does not disclose “a POS builder interface configured to be accessible via network communication with said web server over a

communications network” at least because the administrative tool and web server identified by Petitioner are co-located at the central server. *Woycik* does not teach a POS builder interface accessible over a communications network with a web server.

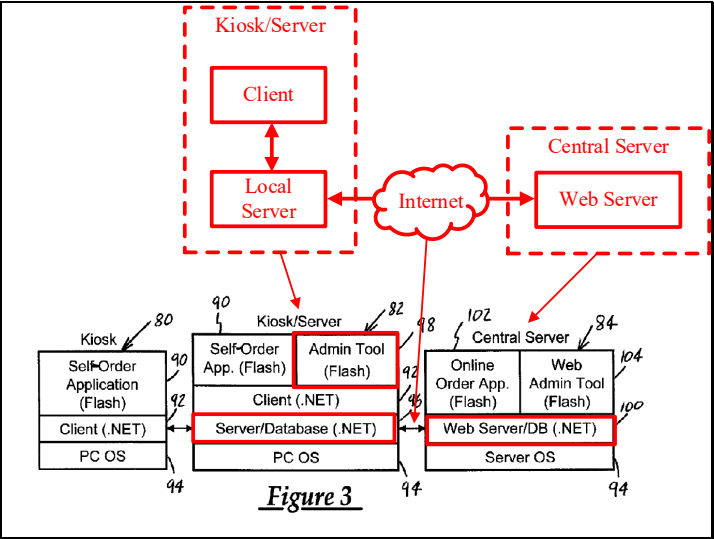
76. The Petition itself illustrates “POS builder software” co-located with the “Web server,” not communicating over a communications network:



Petition, 25. As *Woycik* describes with reference to Figure 1, the kiosk/server is connected to the central server via the Internet. See EX1005, [0071]. However, those portions of *Woycik* that reference using the administrative tool via a communications network (the Internet), refer to the remote version of the administrative tool, which accesses the local version of the administrative tool at the local server via the communications network. See EX1005, [0122]. The administrative tool accessing the local server is different than accessing the web server at the central server.

77. Those portions of *Woycik* where the administrative tool is separated

from the web server via a communications network (e.g., the Internet), the administrative tool is the local version modifying kiosk configurations at the local server, not accessing the web server via the communications network. E.g., EX1005, [0095] (“All of these settings are stored on the local server 16, 82. The administrative tool 98 allows an administrator to modify these settings via a local kiosk touch screen.”). Figure 3 illustrates this relationship:



EX1005, FIG. 3 (annotated).

78. Therefore, in my opinion, *Woycik* fails to disclose “a POS builder interface configured to be accessible via network communication with said web server over a communications network,” where that web server includes POS builder software installed thereon.

B. Ground 2

79. In my opinion, Ground 2 fails because the Petition fails to demonstrate that *Olson* and *Woycik*—alone or in any combination—disclose “a web server including POS builder software installed thereon” and “a POS builder interface configured to be accessible via network communication with said web server over a communications network” EX1001, Claim 1. Also, the Petition fails to demonstrate that *Olson* and *Woycik* disclose features recited in Claims 2-20. Further, Petitioner fails to show that the purported knowledge of a POSITA cure these deficiencies. Moreover, Petitioner fails to show that a POSITA would be motivated to combine *Olson* and *Woycik*.

80. In my opinion, neither Petitioner nor Dr. Mowry explain how the “java POS” system of *Olson* can be modified with the Flash POS system of *Woycik*.

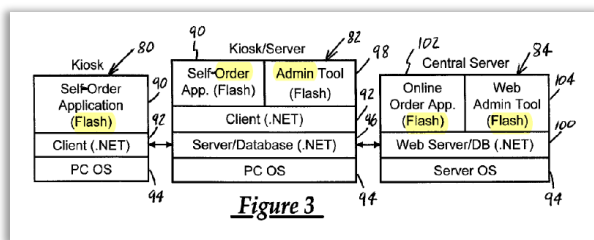
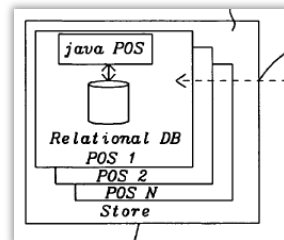


Figure 3



EX1004, FIG. 3 (highlighted)

EX1006, Fig. 4 (excerpt)

81. Indeed, when describing *Olson*, Petitioner states, “[e]ach POS terminal is implemented with ‘personal computer hardware and software.’” Petition, 81 (citations omitted). Then, in a conclusory manner, Petitioner provides that a

“POSITA would have been motivated to add the web-based administrative tool taught by *Woycik* to the web-based POS system taught by *Olson* and would reasonably expect the combination to improve the usability and configurability of *Olson*’s web-based POS system.” EX1002, ¶121. By 2008, Adobe Flash was well known publicly to have security vulnerabilities that could be used to bypass security restrictions and allow execution of arbitrary code or commands despite repeated attempts by Adobe and others to address them.¹ As discussed herein, *Woycik* relies on vector graphics capability supplied by Adobe Flash. A POSITA would be averse to contaminate *Olson* with the security compromised Flash technology, especially in light of the POS industry’s drive for compliance with the PCI Data Security Standard.

¹ See references from Cybersecurity & Infrastructure Security Agency (CISA) from 2007. (i) <https://www.cisa.gov/news-events/bulletins/sb08-007>; (ii) <https://www.cisa.gov/news-events/alerts/2007/12/21/adobe-updates-multiple-vulnerabilities-0>; (iii) <https://www.cisa.gov/news-events/alerts/2007/12/21/adobe-updates-multiple-vulnerabilities>; (iv) <https://www.cisa.gov/news-events/alerts/2007/12/18/apple-updates-multiple-vulnerabilities-0>; (v) <https://www.cisa.gov/news-events/bulletins/sb07-358>; (vi) <https://www.cisa.gov/news-events/alerts/2007/11/15/apple-updates-multiple-vulnerabilities-0>; (vii) <https://www.cisa.gov/news-events/bulletins/sb07-288>; (viii) <https://www.cisa.gov/news-events/bulletins/sb07-274>; (ix) <https://www.cisa.gov/news-events/bulletins/sb07-232>; (x) <https://www.cisa.gov/news-events/alerts/2007/07/11/adobe-flash-player-updates-multiple-vulnerabilities>; (xi) <https://www.cisa.gov/news-events/bulletins/sb07-197>; (xii) <https://www.cisa.gov/news-events/alerts/2007/03/13/apple-updates-multiple-vulnerabilities-0>; (xiii) <https://www.cisa.gov/news-events/bulletins/sb07-050>; (xiv) <https://www.cisa.gov/news-events/bulletins/sb07-008>.

82. Furthermore, both Petitioner and Dr. Mowry fail to distinguish or note that each of the systems taught in *Olson* and *Woycik* have fundamentally different software platforms. Indeed, neither Petitioner nor Dr. Mowry explain how the systems and software platforms would be compatible or changed.

1. Independent Claims 1 and 14

83. In my opinion, the combination of *Olson* and *Woycik* does not disclose “a web server including POS builder software installed thereon” at least because *Woycik* does not teach (or even mention) POS builder software, let alone POS builder software that runs on the web server of a web-based POS system.

84. As discussed above, *Woycik* relies on an administrative tool that runs on a local server kiosk running in a same store with other kiosks, and *Woycik*’s teaching is limited to technology requiring such a local server. *See supra* Section IX.A.

85. Like *Woycik*, *Olson* also does not teach a web server including POS builder software installed thereon, and thus cannot be relied upon to cure the deficiencies of *Woycik*.

86. *First*, *Olson* is entirely silent with respect to a “point of sale builder software” or a “builder” or “to build” or “to edit” POS terminals. EX1006, *passim*.

87. *Second*, those portions of *Olson* identified by Petitioner also fail to disclose “a web server including POS builder software installed thereon,” as recited

by Claim 1. The portions cited by Petitioner identify back office (BO) software of *Olson* that runs on web servers. Petition, 50-51. As discussed above, the BO of *Olson* can receive and store transaction data from a point of sale (POS) in a relational database, and provide certain updated information to the POS when requested by the POS. EX1006 [0017]-[0019]. However, neither function describes “a web server including POS builder software installed thereon.” Receiving and storing transaction data from a POS is unrelated to POS builder software. And the BO software on a web server providing updated information to a POS is different than building or editing a POS terminal. *Id.* *Olson* does not describe that the BO software creates or modifies the way that the POS terminal operates, looks, or processes using retail logic, but that the BO software can provide to the POS terminals certain updated information for the terminal to use. EX1006 [0019].

88. That *Olson* does not describe POS builder software on a web server can be seen clearly by how *Olson* teaches a user modifying a POS terminal. For example, Figure 2 of *Olson* is a “POS terminal 10” that includes a “core transaction Engine 20.” EX1006 [0021]. The core transaction engine “interfaces with configurable modules 30, which handle the meaning & processing of terminal keys required.” EX1006 [0021]. The configurable modules 30 are “preferably implemented in a computer language such as JAVA....” EX1006 [0022], [1025] (“Stores 31, 32 illustrate several POS implemented with Java software using

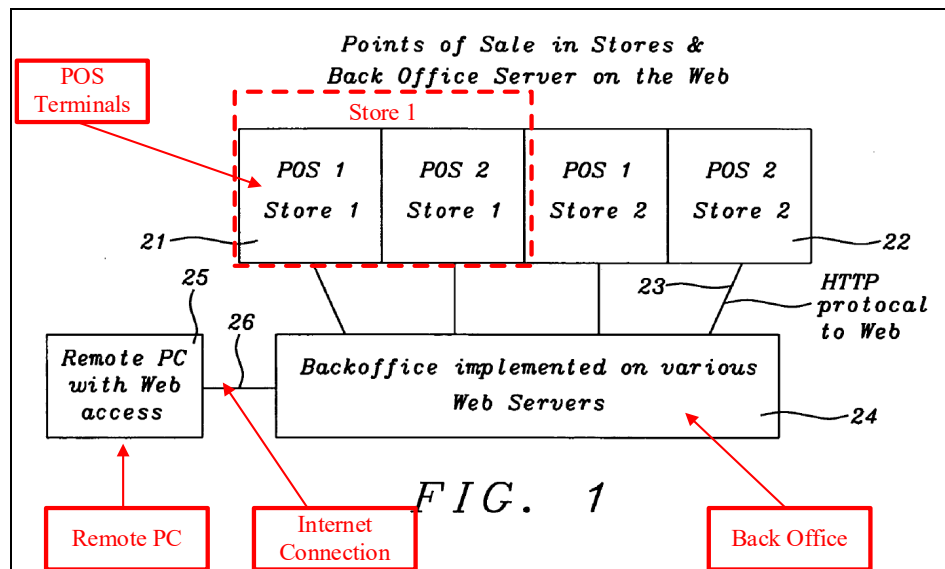
relational databases.”). The end user of the POS terminal is then allowed to make changes to these configurable modules through programming in Java. EX1006 [0024]. According to *Olson*’s discussion, the POS terminal is the “client,” and Java is specified as “client-side JavaScript.” EX1006 [0026].

89. Therefore, in my opinion, the combination of *Olson* and *Woycik* does not disclose “a web server including POS builder software installed thereon” as recited in Claim 1.

90. In my opinion, the combination of *Olson* and *Woycik* does not disclose “a POS builder interface configured to be accessible via network communication with said web server over a communications network” at least because the administrative tool and web server identified by Petitioner are co-located at the central server. As discussed above, *Woycik* does not teach a web server accessible to a POS builder interface “over a communications network.” *See supra* Section X.A.

91. Like *Woycik*, *Olson* does not disclose this feature, and cannot be relied upon to cure the deficiencies of *Woycik*. Rather, *Olson* alludes to providing back office software via a SAAS distribution model (e.g., via the internet). *Olson* states that “the back-office system can be provided as a service,” noting “Software as a Service (SAAS) is a software distribution model in which applications are hosted by a vendor or service provider and made available to customers over a network,

typically the Internet.” EX1006 [0027]. However, *Olson* describes a BO system that stores transaction data and provides other administrative support. Thus, even to the extent that *Olson* discloses providing its BO software, BO software over the internet is entirely different than “a POS builder interface” over the internet.



Ex. 1006, FIG. 1 (annotated)

92. Therefore, in my opinion, the combination of *Olson* and *Woycik* does not disclose “a POS builder interface configured to be accessible via network communication with said web server over a communications network” as recited in Claim 1.

C. Ground 3

93. In my opinion, Ground 3 fails because the Petition fails to demonstrate that *Tengler* discloses a “web-based point of sale (POS) builder system,” “said POS

builder interface is configured to be utilized to access said POS builder software,” and “a web server including POS builder software installed thereon” and EX1001, Claim 1. The Petition also fails to demonstrate that *Tengler* discloses features recited in Claims 2-20. Further, Petitioner fails to show that the purported knowledge of a POSITA cures these deficiencies.

1. Independent Claims 1 and 14

94. In my opinion, *Tengler* does not disclose a “web-based point of sale (POS) builder system” at least because *Tengler* requires an in-store server, and does not require the Internet. Like the prior art before the ’012 Patent, *Tengler* teaches a server at each store. Referring to Figure 14, *Tengler* states: “the restaurant management software 600 includes a portion that runs on a central server in the restaurant and is called the restaurant management system (RMS) server 604.” EX1005, [0088]. *Tengler* continues:

The server 604 stores restaurant status and order status information for local viewing at registers, stations, terminals, and other devices connected to a local area network. The RMS server 604 tracks the current state of restaurant 2 (for example, open or closed) and also tracks the state of all pending orders at all times and stores this information in a “shoebox” database 605.

EX1005, [0088]. In fact, each embodiment in *Tengler* has a local server in the store.

95. *Tengler* does not teach or describe any POS builder software installed on a web server. Rather, *Tengler* relies on in-store application servers to run its deficient computer-based ordering system. “For example, the JavaBeans API used

in JavaPOS communicates with Java servers such as J2EE servers and not a web server.” EX1005, [0115], [0121].

96. Therefore, in my opinion, *Tengler* does not disclose a “web-based point of sale (POS) builder system” as recited in Claim 1.

97. Petitioner considers the “manager GUI interfaces 192, 196” disclosed by *Tengler* as corresponding to the “POS builder interface” as recited in independent Claims 1 and 14. *See* Petition, 76, 80, 99. Petitioner likewise considers the “user interface designer 614” as corresponding to the “POS builder software.” *See* Petition, 71, 80-81, 99. Petitioner errs in its contention that “*Tengler*’s manager interfaces [(i.e., POS builder interface)] are utilized to access user interface designer (i.e., POS builder software) for creating or modifying user interfaces of register and self-service applications.” *Id.* at 80-81. Petitioner combines two separate systems disclosed in *Tengler* in an attempt to recreate the elements of the claimed invention. This attempt is futile because Petitioner has failed to demonstrate that *Tengler* teaches that the manager GUI interfaces 192 and 196 are used to access the user interface designer 614.

98. To the contrary, *Tengler* teaches that the manager interfaces and the user interface designer are two distinct ways to “edit the user interface of the register and self-service applications.” EX1005, ¶[0103]. For example, paragraph 103 of *Tengler* states, in pertinent part, “A user interface designer 614 allows management

to edit the user interface of the register and self-service applications and also saves the specifications in the database 602.” EX1005, ¶[0103]. It further states, “The store resident web server 620 also allows managers to edit the user interface of the register and self-service applications and also saves the specifications in the database 602.” EX1005, ¶[0103]. Managers utilize the manager interfaces 192 and 196 to edit the user interface of the register and self-service applications using the web server 620. *See* EX1005, ¶¶[0109], [0073]. Furthermore, “the store-resident web server 620 and the user interface designer 614 [both] directly connect with the database 602,” EX1005, ¶[0107]; *see also id.* at Fig. 14. Finally, *Tengler* explicitly states, “The manager’s interface[s 192 and 196 are] linked directly to the database in the restaurant (without the intervention of any intermediary database or process)” EX1005, ¶[0073]. Therefore, the manager GUI interfaces 192 and 196 are not used to access the user interface designer 614.

99. Essentially, *Tengler* teaches two methods for “edit[ing] the user interface of the register and self-service applications”: *first*, via the user interface designer 614; and *second*, via the manager interfaces 192 and 196 accessed through the web server 620. If, as Petitioner contends, the manager interfaces 192 and 196 are utilized to access user interface designer 614, there would be no need for both the user interface designer 614 and the store resident web server 620 to possess the capability to save the updated specifications to the database 602.

100. Additionally, *Tengler* teaches away from using any intermediary process between the manager interfaces 192 and 196 and the database because *Tengler* teaches “the manager’s interface[s] 192 and 196 are] linked directly to the database in the restaurant (without the intervention of any intermediary database or process)....” EX1005, ¶[0073].

101. Thus, in my opinion, *Tengler* fails to teach “wherein said POS builder interface is configured to be utilized to access said POS builder software” as recited in Claim 1.

102. In my opinion, *Tengler* does not disclose “a web server including POS Builder software installed thereon,” as recited in Claim 1. Petitioner and its expert, misconstrue the user interface designer 614 disclosed in *Tengler*.

103. Petitioner considers the “main server 464” disclosed in *Tengler* as corresponding to the “web server” recited in the independent claims. *See* Petition, 70-71. Similarly, as discussed in the previous section, Petitioner considers the “user interface designer 614” as corresponding to the “POS builder software.” *See id.* at 71. Petitioner fails to show that *Tengler* teaches that the user interface designer 614 is installed on the store-resident web server 620 residing on the main server 464.

104. Petitioner recognizes this shortcoming, and thus alleges,

To the extent *Tengler* does not disclose the user interface designer is installed on main server 464, a POSITA would have been motivated to install it there because user interface designer 614 ‘directly

connect[s]' with database 602 and interfaces with web server software 620, both located on main server 464.

Petition, 72 (alteration in original) (citing EX1005 ¶¶[0107], [0109], [0073]).

Petitioner and its expert, misconstrue the user interface designer 614 disclosed in *Tengler*.

105. As discussed above, *Tengler* does not teach, and in fact teaches away from, Petitioner's contention that the user interface designer 614 interfaces with the web server 620 installed on main server 464. *See supra* Section IX.C. *Tengler* states that both the user interface designer 614 and web server 620 "directly connect with database 602," (EX1005 ¶[0107]), and both have the capability to "edit the user interface of the register and self-service applications and also save[] the specifications in the database 602." *Id.* ¶[0103]. Discrete connections teach that user interface designer 614 is separate and distinct from web server 620. If user interface designer 614 was implemented on web server 620, user interface designer 614 would connect to database 602 through web server 620. As a result, a POSITA would not understand *Tengler* to teach that the user interface designer 614 interfaces with the web server 620 installed on main server 464.

106. *Tengler* does not teach or suggest that the user interface designer 614 is a web application. Rather, a POSITA would interpret the user interface designer 614 disclosed in *Tengler* as a standalone application (i.e., a desktop or thick client) that directly connects with the database 602 to "allow[] management to edit the user

interface of the register and self-service applications.” Such a standalone application would not be installed on the main server 464, but rather a client device such as 702. Further, there is no suggestion that the interface designer 614 is installed on the web server, nor would there be a reason for it to be installed on the web server given the description, albeit minimal, of the function and operation of the interface designer 614 discussed in *Tengler*.

107. Thus, in my opinion, *Tengler* fails to disclose “a web server including POS builder software installed thereon.”

XI. Secondary Considerations

108. I understand that secondary considerations evidence can establish that an invention appearing to have been obvious in light of the prior art was not. I further understand that all evidence pertaining to the objective indicia of nonobviousness must be considered before reaching an obviousness conclusion.

109. I understand that there is no requirement that objective evidence must be tied exclusively to claim elements that are not disclosed in a particular prior art reference in order for that evidence to carry substantial weight. I further understand that the claimed combination as a whole may serve as a nexus for the objective evidence. I further understand from counsel that proof of nexus is not limited to only when objective evidence is tied to the supposedly new features.

110. In my opinion, there is a strong nexus between CloudofChange’s

claimed invention (recited in Claims 1-4) and the objective evidence of non-obviousness regarding commercial success. There is evidence that the commercial success of the present invention is due to the novel and unique combination of elements of CloudofChange's claimed web-based POS builder system, as recited in Claim 1-4. In my opinion, there is a strong nexus between CloudofChange's claimed invention and the long felt need.

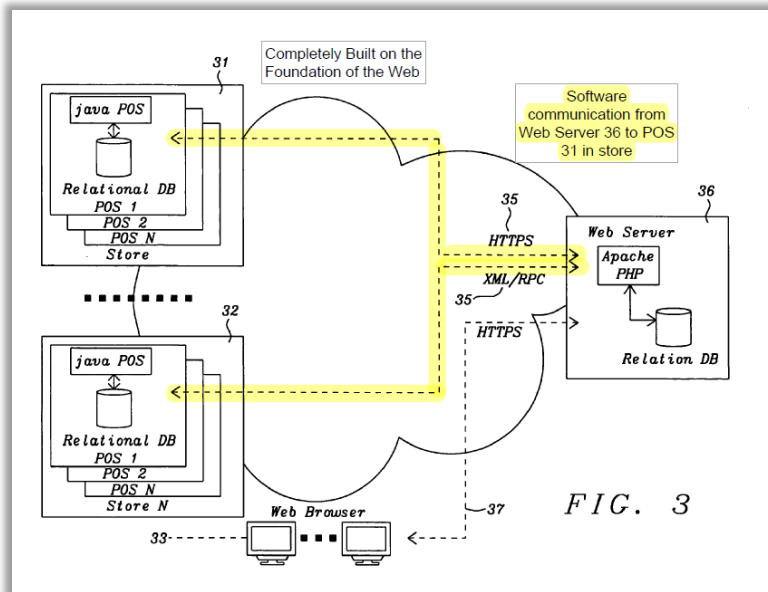
111. **Commercial Success.** I understand that during the jury trial in the NCR Litigation, evidence of NCR's system and sales were presented. At the conclusion of the trial, a jury verdict was issued finding that: (i) none of the asserted patent claims (Claims 1-4 and 9) were invalid; (ii) NCR's infringement was willful; and (iii) CloudofChange was entitled to \$13,200,000 in damages. EX2008, 6-8. Despite the jury verdict finding infringement and willfulness, NCR continues to use its Silver Product. The trial testimony in the NCR Litigation established that the NCR Silver product infringed Claims 1-4 and had sales of over \$100 million. EX2010, 164:12-20. Therefore, there is evidence that the commercial success of the NCR Silver product is covered by the claimed combination as a whole as recited in Claims 1-4 of the '012 Patent. EX2009-2011, 2023. Thus, a nexus between the novel and unique combination of elements of CloudofChange's claimed web-based POS builder system and the NCR Silver sales is clearly established here. As found by the NCR jury, NCR's silver product embodies the novel and unique claimed

features of Claims 1-4 of the '012 Patent. EX2008, 4, 6-8. Therefore, there is a nexus between the claimed invention as a whole, as recited in Claims 1-4 and 9, and the commercial success.

112. **Long-Felt Need.** In my opinion, the claimed web-based point of sale builder system embodied in the '012 Patent solved a long felt, but unresolved need. For example, while traditional point of sale (POS) systems were tethered to in-store servers and required expensive and time-consuming manual software configuration for store and restaurant owners to make even minor changes to menu items or product offerings. In contrast, the claimed web-based point of sale system, allowed for more open, more prolific, and more standardized connectivity. More specifically, the patented invention, a web-based point of sale builder system, eliminated these challenges by providing an inexpensive and efficient method for “assist[ing] non-expert business operators in building, editing and testing a point of sale system to manage their businesses” while simultaneously removing the requirement of purchasing and maintaining on site computer servers for POS systems. EX1001, Abstract, 5:56-58. Accordingly, a need existed for a web-based point of sale builder system embodied in the '012 Patent. The inventors of the '012 Patent recognized this need, and invented the claimed technology to address the need.

113. In my opinion, prior attempts were unsuccessful, and the prior art

teaches away from the claimed solution. For example, *Woycik* discussed at length above, focuses on the advantage of using a local server and not the web-based point of sale system as embodied by the claims of the '012 Patent. By contrast, as CludofChange explains above, the web-based POS builder system is built completely on the web and the software communicates from web server 36 to POS 31 in-store, as recited in claims. EX1001, Claims 1, 14.



EX1001, Fig. 3 (annotated).

114. The invention of the '012 Patent is directed at an integral solution that allowed for more open, more prolific, and more standardized connectivity. The invention of the '012 Patent satisfied the long-felt need by replacing traditional point of sale (POS) systems with a web-based POS builder system built completely on the

web. *Id.* As a result, the invention provides an inexpensive and efficient method for “assist[ing] non-expert business operators in building, editing and testing a point of sale system to manage their businesses” while simultaneously removing the requirement of purchasing and maintaining on site computer servers for POS systems. *Id.*

115. I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.