

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION**

CloudofChange, LLC,

Plaintiff,

vs.

Lightspeed POS Inc.,

Defendant.

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Civil Action No. 6:21-cv-01102-ADA

JURY TRIAL DEMANDED

DEFENDANT’S FINAL INVALIDITY CONTENTIONS

Pursuant to the Court’s May 2, 2022, Scheduling Order (Dkt. 31) and the November 7, 2022, Joint Notice (Dkt. 50), Defendant Lightspeed POS Inc., now known as Lightspeed Commerce Inc. (“Lightspeed”), serves the following final invalidity contentions to Plaintiff CloudofChange, LLC (“COC”). Lightspeed is concurrently producing all prior art referenced in these invalidity contentions that Lightspeed has not previously produced. Lightspeed produced technical documents sufficient to show the operation of the accused products on February 9, 2022. These contentions incorporate by reference the appendices to Lightspeed’s Preliminary Invalidity Contentions served March 9, 2022 and to Lightspeed’s First Supplemental Preliminary Invalidity Contentions served June 8, 2022.

I. Introduction

COC has alleged infringement of U.S. Patent Nos. 9,400,640 (“the ’640 patent”), 10,083,012 (“the ’012 patent”), and 11,226,793 (“the ’793 patent”) (collectively, “the Asserted Patents”). By identifying exemplary prior art that anticipates and/or renders obvious the Asserted Claims, Lightspeed does not admit that the claim limitations are definite, nor does Lightspeed

admit that any claim limitations are supported with an appropriate written description and/or enabling disclosure in the applicable patent specifications. Nothing herein should be construed as an admission of agreement with COC's apparent claim constructions or its application of the Asserted Claims to any of the accused products.

COC served Preliminary Infringement Contentions on January 12, 2022, and First Amended Preliminary Infringement Contentions on March 30, 2022. Lightspeed reserves the right to amend and supplement these invalidity contentions in response to any amendments to, or revisions of, COC's infringement contentions or claim construction assertions, or otherwise as permitted by the Court's Scheduling Order.

While Lightspeed contests that any of the claim limitations of the Asserted Patents read on the accused products, to the extent COC alleges infringement, under COC's interpretation, it has conceded the invalidity of the Asserted Patents where an accused product predates the Asserted Patents. *See Peters v. Active Mfg. Co.*, 21 F. 319, 321 (C.C.S.D. Ohio 1884), *aff'd*, 129 U.S. 530 (1889) ("That which infringes, if later, would anticipate, if earlier.").

The prior art and obviousness combinations identified or described herein and/or in Appendices A1–A21, Appendices B1–B18, Appendices C1–C13, and Appendices D–G, are exemplary and are not intended to be exhaustive. Additional obviousness combinations of the references identified in these contentions are possible, and Lightspeed reserves the right to use any such combinations in this litigation. In particular, Lightspeed is currently unaware of the extent, if any, to which COC will contend the limitations of the claims at issue are not disclosed in the art identified by Lightspeed. To the extent COC contests any such limitation is not present in a reference or combination of references, Lightspeed reserves the right to identify other references that would have made obvious the addition of the allegedly missing limitation to the disclosed

system or method of operation. Similarly, to the extent COC attempts to swear behind the priority date asserted in its contentions (*i.e.*, February 5, 2008 for all Asserted Claims), or otherwise contends any reference does not qualify as prior art, Lightspeed reserves the right to identify other references that anticipate or render obvious the Asserted Claims.

Lightspeed's investigation into prior art remains ongoing, including prior art identified in these disclosures, prior art not yet known to Lightspeed, third-party prior art (including in response to third-party subpoenas), and related evidence, documents, and knowledgeable witnesses. Moreover, prior art may become relevant depending upon the invention date COC alleges for each of the Asserted Patents, the evidence supporting such allegations, the claim constructions COC asserts, any supplemental claim constructions the Court adopts, COC's amendment or supplementation of its infringement contentions, Lightspeed's further understanding of COC's infringement contentions, COC's discovery responses, and COC's responses to Lightspeed's disclosed motivations to combine or modify references. Additional information and evidence about prior art, including documentation and witness testimony, may be obtained and/or presented in support of Lightspeed's invalidity contentions. Lightspeed reserves the right to present this additional information and evidence in support of its invalidity contentions and to amend and supplement these invalidity contentions accordingly in a manner consistent with the Scheduling Order, Federal Rules of Civil Procedure, and the Court's rules.

II. The Asserted Patent Claims

In its First Amended Preliminary Infringement Contentions, COC has asserted that Lightspeed allegedly infringes the following claims of the Asserted Patents (collectively, "the Asserted Claims"):

Patent	Asserted Claims ¹
the '640 patent	1, 14
the '012 patent	1–2 and 6–13
the '793 patent	1–4, 9–11, 42, and 44

Although COC has not proffered infringement contentions with respect to other unasserted claims of the Asserted Patents, Lightspeed reserves the right to modify, amend, and/or supplement its invalidity contentions if the Court allows COC to assert infringement of presently unasserted claims of the Asserted Patents. While Lightspeed provides the following invalidity contentions for the claims asserted by COC, Lightspeed hereby reserves its right to seek invalidation of all claims in each of the Asserted Patents.

III. Invalidity Contentions

To focus the issues, Lightspeed cites representative portions of an identified reference, even where a reference may contain additional support for a particular claim limitation.² Persons of ordinary skill in the art generally read an item of prior art as a whole and in the context of other publications and literature. Thus, to understand and interpret any specific statement or disclosure within a prior art reference, such persons would rely on other information within the reference, along with other publications and their general scientific knowledge. Lightspeed may rely on uncited portions of the prior art references and on other publications (*e.g.*, prior art references cited

¹ By email dated April 22, 2022, COC withdrew the following asserted claims: 3–6 and 8–13 of the '640 patent and claims 3–4 of the '012 patent. Accordingly, only claims 1 and 14 of the '640 patent are currently asserted, while the asserted claims of the '012 patent are claims 1–2 and 6–13.

² The Local Rules do not require Lightspeed to provide any quotations or excerpts from documents where that information is readily identifiable through pinpoint citations (*e.g.*, column/page and line cites and paragraph cites). Lightspeed's inclusion of quoted text is only for convenience and does not limit the portions of the reference that Lightspeed may rely on to establish its defenses. Lightspeed may rely on all cited portions of the identified references, even if not quoted therein. Further, Lightspeed reserves the right to rely on additional portions of the reference to provide context for the cited portions, to provide motivations to combine with other references, and to respond to any arguments by COC.

on the face of the Asserted Patents and the patents or technical references cited within the body of the Asserted Patents) and expert testimony to provide context, and as aids to understanding and interpreting the portions that are quoted and/or cited. Lightspeed may rely on expert opinions for additional or different motivations to combine the prior art references. Lightspeed may also rely on explicit or implicit motivations to combine prior art references disclosed in the references.

Where Lightspeed cites a particular figure in a prior art reference, the citation should be understood to encompass the caption and description of the figure and any text relating to the figure in addition to the figure itself. Conversely, where a cited portion of text refers to a figure, the citation should be understood to include the figure as well. Additional evidence regarding the features and elements of the prior art reference may be provided by witness testimony, or by additional documents that describe the prior art reference that are discovered through the course of discovery.

Lightspeed may rely on any additional prior art and/or motivations to combine prior art references identified or produced in the future by any party in this litigation or in any related litigation, as well as any references discussed or disclosed during third party discovery or in any expert report on the validity of any of the Asserted Patents. Lightspeed expressly incorporates by reference herein the invalidity contentions served by defendants in related cases filed by COC (*e.g.*, Appendix F, *CloudofChange, LLC v. NCR Corp.*, 6:19-cv00513 (W.D. Tex.)) and NCR's Expert Report of Sandeep Chatterjee Ph.D. re: Invalidity of Asserted Claims of U.S. Patent Nos. 9,400,640 and 10,083,012 (COCLTS0004036-COCLTS0004132), as they relate to the Asserted Patents. Lightspeed also expressly incorporates herein IPR2022-00779, IPR2022-00997, IPR2022-01143, IPR2023-00232, IPR2023-00287, IPR2023-00288 and any other *inter partes* review petitions, including accompanying petitions, declarations, and exhibits related to the

Asserted Patents (including, but not limited to the prior art references and motivations to combine those references) that are filed against the Asserted Patents during this lawsuit. For prior art references identified and/or addressed in any attached or referenced claim chart, expert report, expert declaration, and/or IPR petition, Lightspeed reserves its right to rely on any and all disclosures of such prior art reference identified in such documents collectively. Lightspeed reserves the right to modify, amend, and/or supplement its invalidity contentions in response to positions taken by COC in related proceedings. Lightspeed may also rely on references identified in the file history of any of the Asserted Patents.

A. Prior Art

1. Prior Art Patents and Patent Publications Under 35 U.S.C. §§ 102(a), (b), (e), (g)

Number	Country	Date of Issue/Publication	Date of Application
U.S. Patent Pub. No. 2005/0021409 (“Michaud”)	United States	January 27, 2005	July 16, 2004
WO 02/39226 (“Thompson”)	PCT	May 16, 2002	November 8, 2001
U.S. Patent App. Pub. 2005/0049921 (“Tengler”)	United States	March 3, 2005	August 29, 2003
WO 03/065178 (“Redmond”)	PCT	August 7, 2003	January 30, 2003
U.S. Patent App. Pub. 2007/0265935 (“Woycik”)	United States	November 15, 2007	May 1, 2007
U.S. Patent Pub. No. 2008/0208696 (“Olson”)	United States	August 28, 2008	February 26, 2007
JP 2004-164194A (“Nakamura”)	Japan	June 10, 2004	November 12, 2002
Patent 2003-0088637 (“Choi”)	South Korea	November 20, 2003	May 14, 2002
U.S. Patent Pub. No. 2004/0128199 (“Cusack”)	United States	July 1, 2004	December 15, 2003
WO 01/65427 (“Costello”)	PCT	September 7, 2001	March 2, 2001
U.S. Patent Pub. No. 2006/0235755 (“Mueller”)	United States	October 19, 2006	July 10, 2006

Number	Country	Date of Issue/Publication	Date of Application
U.S. Patent Pub. No. 2004/0181454 (“Manno”)	United States	September 16, 2004	March 12, 2003
U.S. Patent Pub. No. 2007/0175992 (“Brown”)	United States	August 2, 2007	January 23, 2007
U.S. 6,247,032 (“Bernardo”)	United States	June 12, 2001	June 19, 1998
U.S. Patent Pub. No. 2006/0195510 (“McNally”)	United States	August 31, 2006	February 10, 2006
U.S. Patent No. 5,920,312 (“Wagner”)	United States	July 6, 1999	October 31, 1996
U.S. Patent Pub. No. 2002/0194074 (“Jacobs”)	United States	December 19, 2002	May 17, 2002

2. Prior Art Systems Under 35 U.S.C. §§ 102(a), (b), (g)

Lightspeed identifies the systems disclosed in the patents and publications listed above as prior art. Additionally, Lightspeed identifies the following products and systems, including constituent software, hardware, methods, and processes, as prior art that may anticipate or render obvious the Asserted Claims. Documentation regarding the identified systems are referred to herein using the nomenclature defined in the associated charts for each system, and any system documentation, source code, or other evidence may be used collectively or individually in combination with other systems and references for the teachings identified in the associated charts for such documentation. On information and belief, each product and/or system (1) was known or used in this country before the alleged invention of the claimed subject matter of the Asserted Patents, (2) was in public use and/or on sale in this country more than one year before the effective filing date of the application for the Asserted Patents and/or (3) was made in this country prior to the alleged invention of the claimed subject matter of the Asserted Patents by another inventor who had not abandoned, suppressed or concealed it.

System or Product	Seller/Provider/User
CSS Live POS (LivePOS)	CSS Holdings Corporation
Simphony(TM)	MICROS Systems
Flashpoint POS	T.R.I.M. POS Software Corp.
TransactionwareEnterprise	Triversity Inc.
HTMLWorks, VxWorks	Wind River
Micros Doc Café Version 3.0.4 (and earlier versions)	MICROS Systems
LightSpeed Onsite (including version 2.5 and earlier versions)	XSilva Systems Inc.
OrderPerfect	Exit41, Inc.
Nextep self-order kiosks and related software (including at least Series 3.3 and earlier), including without limitation “Casino Express” self-order kiosk technology	Nextep Systems, Inc.
Aldelo for Restaurants (formerly NextPOS for Restaurants)	Aldelo Systems Inc. (formerly NextPOS Corp.)
InfoGenesis (formerly Revelation / e-Revelation)	Agilysys, Inc. (formerly InfoGenesis)
Mercator (POS and Back Office) ³	Global Retail Technology, LLC
posAppliance	Global Retail Technology, LLC

Discovery is ongoing, and Lightspeed will provide further identification of the above systems and any other systems Lightspeed learns about through discovery (“the Prior Art Systems”), including constituent software, hardware, methods, and processes, as prior art that may anticipate or render obvious the Asserted Claims, as such information becomes available. Lightspeed is diligently searching for additional relevant documentation regarding the LightSpeed

³ On December 15, 2022, Lightspeed became aware of additional evidence regarding the Mercator system which has been produced as LIGHTSPEED073146 and in the prior art source code production under the folder: “System Art Public Source Code\Source Code FreeMercator SourceForge.” Lightspeed reserves the right to amend the associated charts to include additional details from these materials and other recently-identified materials as Lightspeed evaluates them.

product and will produce such documentation and/or further supplement these invalidity contentions as discovery proceeds and such documents are identified. Lightspeed reserves the right to amend and supplement these contentions to provide disclosures based on further investigation and as Lightspeed obtains additional information about these products and systems.

3. Admitted Prior Art

Lightspeed reserves the right to rely on the admitted prior art in the Asserted Patents. *See, e.g.,* '640 Patent at 1:20–62 (Description of Related Art). For example, the applicant/patentee admitted:

- Configuring POS terminals to display POS screens, including “defining the position and operation of touch screen keys” was known. (*Id.* at 1:20–33)
- “Users can configure display screens either at a point of sale location or at home with a personal computer.” (*Id.* at 1:44–46)
- Networked server-client applications, including remotely configurable application interfaces, were known. (*Id.* at 1:42–62)
- “Software as a Service (SMS) 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.” (*Id.* at 5:60–63)

B. Invalidity Under 35 U.S.C. § 103

In addition to being anticipated, the Asserted Claims are also invalid as obvious over the same teachings identified for anticipation and various combinations of the references. A person of ordinary skill in the art (“POSITA”) would have been motivated to combine the prior art references and/or their teachings based on, for example, the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art. In *KSR International Co.*

v. Teleflex, Inc., the Supreme Court rejected a “rigid approach” to the question of obviousness in favor of “an expansive and flexible approach” and provided additional guidance. 127 S. Ct. 1727, 1739 (2007).

In *KSR*, the Court held that, among other things, “[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *Id.*; *see also id.* at 1740 (“[A] court must ask whether the [alleged] improvement is more than the predictable use of prior art elements according to their established functions.”). The Court further explained that “if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.” *Id.* at 1740.

Of course, the problem motivating the patentee, i.e., “the problem the patentee was trying to solve,” may motivate a POSITA to find solutions, but “neither the particular motivation nor the avowed purpose of the patentee controls.” *Id.* at 1741–42. The *KSR* Court also recognized that other known problems in the field, design needs, and market pressures may motivate a POSITA to survey known art for solutions to problems. *Id.* at 1742 (“When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp.”). “Under the correct analysis, any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.” *Id.*

When a person of ordinary skill uses an identified, predictable solution to solve a problem, “it is likely the product not of innovation but of ordinary skill and common sense.” *Id.* In addition, when “a work is available in one field of endeavor, design incentives and other market forces can

prompt variations of it, either in the same field or a different one.” *Id.* at 1740. If a person of ordinary skill can implement a predictable variation, § 103 bars its patentability. *Id.* The rationale to combine or modify prior art references is significantly stronger when references seek to solve similar problems, come from the same field, and the solutions to the identified problems in the references correspond well. *In re Inland Steel Co.*, 265 F.3d 1354, 1362 (Fed. Cir. 2001). “Common sense teaches, however, that familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle.” *KSR*, 127 S. Ct. at 1742. “A person of ordinary skill is also a person of ordinary creativity, not an automaton.” *Id.*

Here, to the extent not anticipated, the Asserted Claims represent no more than the result of ordinary implementation of prior art elements and no Asserted Claim goes beyond combining familiar elements in known ways to achieve predictable results or does more than select between predictable design choices known to those of skill in the art. Thus, to the extent that an Asserted Claim is not anticipated, it is nevertheless invalid as obvious.

The patentees identified problems concerning creating or editing POS screens to be solved by the alleged invention. *See, e.g.*, ’640 Patent at 1:20–40. “[S]tore owners tend to retain older, inaccurate, out-of-date POS screens in order to avoid the POS screen editing process,” because the “front-of-screen menu is typically manually coded” and “currently the entry of this front-of-screen information requires intimate knowledge of a complex interface to a front-of-screen programming language.” *Id.* “Currently, only specially trained people can build or change POS screens,” and the “manual POS building and editing is prone to mistakes and is time-consuming.” *Id.*; *see also, id.* at 2:40–45, 2:53–61, 3:35–37. These problems would motivate a POSITA to look to prior art references (including known and available prior art systems) for solutions that allow POS screens

to be created or edited without intimate knowledge of a complex programming language (e.g., by store employees, managers, or operators). “Also, current POS screen editing occurs offline with the testing of the screens occurring at a later date, at a remote store location.” *Id.* at 1:38–40; *see also, id.* at 2:53–61, 3:35–37. These problems would motivate a POSITA to look to prior art references for solutions that would allow POS screen editing to occur online, allow for near contemporaneous testing of the screens, and/or allow for editing and testing at locations other than in a store.

The identified prior art references and systems are analogous art, are in the same field as the claimed invention, and/or are from another field that a person of ordinary skill would look to in trying to solve the problems the patentees were trying to solve and/or other known needs or problems in field. But more than that, they are references and systems designed in similar ways to one another and solve similar problems as the Asserted Patents. Because the references and systems are so similar to each other and to the alleged inventions of the Asserted Patents, it would be obvious and routine for a POSITA to combine any of their elements with one another and with a reasonable expectation of success.

Michaud discloses an application service provider (ASP) POS system for subscribers through remote access and use of POS system hosted on an ASP server. Michaud at Abstract. Michaud explains that, among other things, its system solves the problems with conventional POS systems, which were complex and expensive, require specially equipped computers to run POS software and communicate data to a back office server, and suffer from high cost, installation complexity, and the need to continuously provide skilled staff for operation and maintenance of in-house networked computers and POS systems. *Id.* at [0004]–[0005], [0009].

Thompson discloses a system for consummating a financial transaction at a POS based on

a secure electronic communication over a public network such as the Internet to a server. Thompson at Abstract, p.1–2. Thompson explains, among other things, that its system seeks to avoid the high cost of building a private network to provide faster transaction times and to improve integration with the rest of a business’s enterprises. *Id.*

Tengler discloses a POS system including stations in a quick-serve commercial establishment that enable users to enter orders and a network interconnecting the stations and enabling a manager to access the restaurants database remotely through a web interface. Tengler at [0011], [0022]. Tengler explains, among other things, that order entry and processing is made simpler and less expensive, and managers can remotely access a user interface designer and to manage a set of restaurants from the manager’s home or a central corporation office over the Internet. [0028], [0107]–[0109].

Redmond discloses a secure POS portal architecture for delivering multiple customizable integrated services to merchants, including customer support, loyalty programs, back office processing, and system administration, to form a comprehensive POS environment. Redmond at Abstract, [05]. Redmond explains that current POS systems are essentially static and are ineffective in delivering new personalized services, but with the rapid development of the Internet and e-commerce, current POS systems are at a state of imminent change, and merchants want to leverage these developments and the advantages of the business environment created by the Internet to increase sales, reduce costs, and ensure customer loyalty. *Id.* at [03]–[06].

Woycik discloses a computer-based ordering system that includes a plurality of client terminals having interactive menu screens including buttons to select products and an administration tool including a menu editor that enables the administrator to create and edit the interactive menu screens, the administrative tool may be located on a central server with web

access. Woycik at Abstract, [0075]. Woycik explains that the menus and items are readily editable through the graphical administration tool, and an advantage of this approach is that it enables administrators and store owners to make changes without requiring any knowledge of the underlying code and enables remote administration. *Id.* at [0095], *see also id.* at [0129], [0140] (discussing additional advantages).

Olson discloses managing a POS system with web-based back-office software implemented on servers and a relational database, to provide cost-effective application customization. Olson at Abstract. Olson explains that other POS systems require time and money for software development and testing when changes are implemented, they have weak scalability, require significant technical skill to manage, and system performance degrades when new POS terminals are added within a store or branch. *Id.* at [0006]. Olson explains that using a web-based back office provides full-scalability which results in improved performance, lower cost, minimal installation time, and allows for providing POS software as a service over the Internet. *Id.* at [0027]. On information and belief, prior art Mercator and posAppliance products/systems employed the same or substantially similar system architecture and provided the same or similar benefits described in Olson.

Nakamura discloses a POS application program that is low cost and easily operable on a mobile phone and downloaded over a network from a system server. Nakamura at Abstract, [0006].

Choi discloses methods for building a POS system at low cost by leasing POS terminals and software and providing POS management services online and offline to improve the overall business efficiency. Choi at Abstract.

Costello discloses a POS system for performing POS transactions using a plurality POS devices and a server at a location remote from the POS devices, where transaction details are

transmitted from the POS devices to the server and stored in a database within the server. Costello at Abstract. Costello explains that its POS system is more flexible than standard POS systems, which are expensive and when used with several stores suffer disadvantages when making changes such as tax rates and prices because those changes must be made in each store and marketing reports are difficult to produce. *Id.* at 1:20–2:5.

Mueller discloses updating a menu display on an electronic display device to include an automatically determined price based at least in part on revenue management information. Mueller at Abstract. Mueller explains it is well known that many types of quick service restaurants use POS terminals connected to a back office server to enter transactions, but it would be advantageous to provide a system that synchronizes price and item information used at POS terminals to improve or optimize revenues, gross margin, profits, speed of service, inventory levels, promotions, labor requirements, and/or customer satisfaction. *Id.* at [0026]–[0029].

Manno discloses a web-based POS system that employs POS client computers that are connected over a LAN or the Internet to a server via a web browser of the client computers, which permits management to make changes in store quantities, prices, etc., select which products are sold via Internet, at the store, or both, at the time the product is entered into stock, enter and/or modify item name, price, cost, group, taxable, and inventory, and obtain store performance reports remotely and can be implemented as an integrated suite for collaboration between store locations. Manno at Abstract, ¶ 29, 4:50-52. Manno explains that its web-based system permits a computer (or other device) that is browser enabled to be used as a POS station and allows a retail business to manage its stores using the Internet, which allows for easy portal integration using various operating systems, and allows managers to perform their duties remotely accessing the web-based POS system from home or from a remote site while maintaining the same look and feel as the retail

environment. *Id.* at [0001], [0024]–[0026]. Manno further explains that the web-based POS system permits management to track inventory remotely, make remote sales, print receipts, look up customers, view database information, and view performance and staff hours, all remotely from any location, via Internet, which also allows the system to receive automatic upgrades and updates without requiring any software installation or action within the store. *Id.* at [0030]. Additionally, the web-based POS system is less costly than other systems, resulting in operating cost savings. *Id.* at [0031]. For example, Manno discloses a partitioned server shared by multiple merchants, thus eliminating the need for an in-store server at each merchant location.

Brown discloses an integrated inventory and POS management system that manages a merchant's complete inventory, whether that inventory is sold on a website or in a retail store and that can be managed through an ordinary web browser. Brown at Abstract, [0002]. Brown explains that this solves problems related to setting up a POS system, which requires much work including acquiring and configuring specialized computer hardware, eliciting the services of technical personnel capable of maintaining the system, developing a website for web-based sales and constantly maintaining the items for sale thereon. *Id.* at [0001].

Bernardo discloses a software tool for use with a computer system for simplifying the creation of web sites without the web site creator writing any programming code. Bernardo at Abstract. Bernardo explains that an advantage is that powerful resources available in non-HTML databases are exposed to a web browser. *Id.* at 5:50-56.

McNally discloses an information management and synchronous communications system for web-based systems to provide efficient generation of computerized restaurant menus for display on smart phones using the Internet. McNally at Abstract, [0002]. McNally explains that it provides solutions for smart phones and other devices in common use that were not previously

adapted for use in the hospitality industry without requiring extensive computer expertise to perform functions such as for restaurant ordering by facilitating user-friendly and efficient generation of computerized menus for restaurants that utilize equipment with non-PC-standard graphical formats, display sizes, and/or applications. *Id.* at [0004]–[0008].

Wagner discloses a builder, tester, and runtime integration method a POS interface that is less expensive than previous methods. Wagner at Abstract. Wagner explains that a better approach is to have human interface personnel use a builder tool that utilized Windows, menus, dialogs, and objects to build the interface, which allows for a non-programmer to build the interface and for quick feedback on how the interface will actually look and feel. *Id.* at 1:37–65.

Jacobs discloses a POS self-checkout terminal to allow customers to purchase items using a graphic user interface (GUI) on a touch screen display. Jacobs at Abstract, [0002]. Jacobs explains that traditional systems include one or more terminals, and a database of prices, inventory, and other information related to the items for purchase. *Id.* at [0003]–[0004]. Jacobs explains that non-barcoded items result in delays at self-checkout terminals and teaches a GUI-based editor to configure the GUI for non-barcoded items. *Id.* at [0009]–[0011].

Aldelo for Restaurants is a prior art POS system employing a client-server architecture and comprising various software modules, including those that allow a user to create and edit POS screens (menus, items, buttons, etc.) with a simple user interface. *See* Aldelo 2007 User Manual at XV, 3–5, 54–72. At least some of the modules used with the system were offered via a subscription-based model using a web-browser and the Internet, which offered numerous benefits including: real-time access to database information for multiple store locations from anywhere in the world; avoided costly investments in hardware and software; reduced the hassle of software license fees, versions, upgrades, and backups; and was scalable to any number of terminals and

locations. *See* iEnterprise Datasheet; iEnterprise Article.

Flashpoint is a prior art POS system employing a client-server architecture to provide an enterprise-wide management solution that allows users to easily customize POS screens without the need to pay for custom programming. *See* Flashpoint Home; POS Screens. The enterprise level software package allows users to configure and manage data for chain stores, including creating and editing entire menus and POS setups for the entire chain from one central location using the Internet rather than at each individual store and the changes can be implemented immediately or at a specific time/date. *See* Flashpoint Enterprise Solution.

InfoGenesis is a prior art web- and ASP-based POS system employing a client-server architecture to host its applications on centralized servers to provide access over the Internet for a monthly fee as a solution to the unending cycle of system purchase, system upgrade, and system replacement referred to as the obsolescence challenge. *See* InfoGenesis ASP Basics; InfoGenesis e-Revelation. In the early 2000's, a plethora of popular hospitality software applications and POS applications were available through the application service provider (ASP) model, including InfoGenesis (e-Revelation), which allowed transactions to be processed online or offline and system configuration and menu modifications to be processed centrally and deployed to individual sites. *See* InfoGenesis Server-Centric System at 73, 76, 80. The ASP model offered numerous known benefits, including low cost of entry, minimal setup, reduced on-premises technology infrastructure, cost savings, customizable applications, and application availability. *See id.* at 77–81.

Lightspeed's prior art OnSite product/system employed a client-server architecture to host POS applications and/or databases on a centralized server shared by client POS terminals. Certain features and functionality, including management functions, were accessible via remote network

connection to the server (including over the Internet). Among other things, data concerning customers, products, and prices were stored at and retrieved from the server. OnSite was provided as a subscription service. Lightspeed's contentions that certain features of its prior art Onsite product invalidate the claims is not an admission about the scope of those claims or that any claim is infringed by Lightspeed's other products that COC has accused of infringement.

The identified prior art teaches a variety of known POS system architectures, including web-based and server-client POS systems, that a POSITA would have found obvious and routine to implement. The identified prior art also teaches POS builder software and numerous user-friendly ways, including via web browsers and the Internet, to modify and customize POS terminals and/or POS screens. The prior art further teaches a variety of features and options available for collecting, storing, distributing, and reporting transaction-related information between and among POS terminals and servers, including via the Internet. The prior art additionally teaches partitioning servers to be shared among multiple merchants and using servers to provide enterprise management of multiple stores via the Internet, as well as providing web servers, POS systems, and/or POS builder software as a subscription and/or service. Moreover, the prior art teaches thin-client POS terminals that rely on network connections to servers to provide POS application and/or POS screen updates, to conduct transactions, and to collect, store, and analyze transaction-related information. The prior art further teaches creating or modifying sets of POS screens to be displayed on POS terminals depending on a user's selections (e.g., modifying a POS screen during a transaction based on information received during the transaction). A POSITA would have had all such prior art and tools available at their disposal by the time of the alleged inventions of the Asserted Patents and would have had a strong motivation and reasonable expectation of success in combining features of the prior art as claimed in the Asserted Patents.

For each prior art reference or system that teaches a POS system and software that was not offered using the known software as a service business model (including the ASP model) and/or with web-access via the Internet, a POSITA would have been motivated to combine that reference or system with other references or systems that disclose providing those features to obtain known functionality, benefits, and advantages. For each prior art reference or system that teaches creating or editing POS screens but that required manual coding or programming or that may lack details regarding creating and editing those screens or the interface used to do so, a POSITA would have been motivated to combine that reference or system with other references or systems that disclose methods of creating or editing POS screens without manual coding or programming and/or a user interface for doing so to obtain known functionality, benefits, and advantages. For each prior art reference or system that teaches a POS system including a server providing at least some back-office, management, or other POS functionality, a POSITA would have been motivated to combine that reference or system with other references or systems that disclose providing POS builder functionality from the server or other beneficial functionality. For each prior art reference or system that teaches a POS system utilizing a network that does not comprise the Internet, or utilizing the Internet for some but not all communications between certain network components, a POSITA would have been motivated to utilize the Internet to obtain known functionality, benefits, and advantages.

For example, the prior art discloses web-based and server-client POS systems (including, without limitation, *Woycik, Manno, Olson, Nakamura, Mueller, Redmond, Thompson, Tengler, LightSpeed, Aldelo, Flashpoint, InfoGenesis, Mercator, and posAppliance*). To the extent any reference disclosing a web-based or network-based POS system does not expressly or inherently disclose POS builder software and/or a POS builder interface as claimed, such reference may be

combined with references disclosing POS builder software and/or interface (including, without limitation, *Woycik, Nakamura, Tengler, Bernardo, Brown, LightSpeed, Aldelo, Flashpoint, InfoGenesis, Mercator, and posAppliance*). A POSITA would also have been motivated to modify such references, if necessary, to provide web servers as a subscription as claimed (including, without limitation, as disclosed by *Manno, Olson, Nakamura, Michaud, Choi, Lightspeed, Aldelo, InfoGenesis, Mercator (ASP)*). Any such reference may further be modified, if necessary, to provide an interface to server-resident software to create or modify POS terminals and/or POS screens in real time (*see, e.g., Woycik, Nakamura, Tengler, Bernardo, Brown, LightSpeed, Aldelo, Flashpoint, InfoGenesis, Mercator, posAppliance*). The prior art also discloses the POS system and builder features of the asserted dependent claims of the Asserted Patents, which merely reflect common and routine features of POS systems that a POSITA would have been motivated to incorporate, e.g., to better serve merchants desiring such features, to obtain other known benefits, and/or as a matter of design choice.

One of ordinary skill in the art would have been motivated to combine the identified prior art references based on the references themselves; the common knowledge of one of ordinary skill in the art; market forces resulting from ubiquity and adoption of the Internet and known business models routinely employed in the POS industry; the implied and inherent teachings of the prior art as a whole; and the nature of the problems allegedly addressed by the Asserted Patents and the prior art. Moreover, one of ordinary skill in the art would have combined familiar elements according to known methods to predictably achieve the claimed invention. *KSR*, 127 S. Ct. at 1740. Likewise, one of ordinary skill in the art, at the time of the alleged invention, would recognize that web-based and server-based POS systems and features could have been improved in similar ways, and would have applied those improvements in the same way to predictably achieve the claimed

invention. *Id.* For at least these reasons, it would have been obvious to a POSITA at the time of the alleged invention of the Asserted Claims to combine teachings from the various references and systems cited herein to practice the Asserted Claims and there was a motivation in the art to make such a combination to the extent no single reference discloses every element of an Asserted Claim.

Additional exemplary motivations to combine and/or modify the identified prior art include:

- A POSITA would have been motivated to incorporate into a POS system a software tool for creating, editing, and managing POS screens without the need to write HTML, XML, or other code directly. Writing code directly requires advanced skills outside the normal skillset of a typical merchant and/or user of POS systems. Writing code also requires perfect syntax and expression of functionality and therefore risks introduction of error. A POSITA would have been motivated to incorporate the use of a builder like that disclosed by *Bernardo* (and/or the builders of *Woycik*, *Nakamura*, *Tengler*, *Brown*, *LightSpeed*, *Aldelo*, *Flashpoint*, *InfoGenesis*, *Mercator*, *posAppliance*) to simplify the creation, editing, and maintenance of POS terminals and/or POS screens. A POSITA would be motivated to implement a graphical user interface for web-based and/or server-based software for real-time creation and/or modification of POS screens without the need for software programming expertise, e.g., to provide a user-friendly tool for merchants while eliminating unnecessary overhead for routine and/or simple menu edits.
- Prior art POS references and systems often incorporated a touchscreen compatible layout of graphical user interface elements including (among other things) buttons, lists, prices, taxes, discounts, promotions, totals, images, attributes, and descriptions of

items to purchase. Prior art POS systems also incorporated common and well-understood workflows often desired for POS transactions, such as adding items for a transaction, accepting payment, order fulfillment integration, reporting, etc. A POSITA would have been motivated to incorporate known approaches to optimizing POS software systems, including (without limitation) POS screen design, creation, modification, customization, workflows, and synchronization across POS terminal devices and merchant locations via network distribution.

- A POSITA would have been motivated to utilize well-known and established business models and network architectures, including Internet and web-based services (alone or in combination with other network elements, including other TCP/IP networks, local area networks (LANs), wide area networks (WANs), and virtual private networks (VPNs)), to provide known benefits, e.g., to reduce merchant infrastructure and expense, to allow for changes to POS screens to be made from locations other than in a store, to allow for store operators to manage multiple stores from a central or other location, to collect and process transactions data for an enterprise. For example, many prior art POS references and systems offered gift card and customer loyalty features implemented on a central server for an enterprise consisting of multiple stores to maintain accurate data regarding gift card issuance and redemption at different locations.
- Web technologies and network capabilities were well-known and prevalent for years preceding the alleged invention of the Asserted Patents. A POSITA would have recognized that a web server could provide web-based access to software features and could be easily partitioned to add merchants and/or POS terminals.

- General market forces, including without limitation forces relating to adoption of web-based services, browser-based applications, ubiquity of Internet access, use, and reliability, and graphical user interface innovation and design provides additional motivation to a POSITA to combine and/or modify the prior art in the manner claimed in the Asserted Patents.

Lightspeed incorporates by reference the problems, solutions, and motivations disclosed in the above-referenced IPR petitions challenging the Asserted Patents that have been previously filed or that are filed during the pendency of this case. Lightspeed reserves the right to further specify prior art combinations and related motivations to combine as fact discovery and expert discovery proceed and in response to positions that COC may take in this case. Lightspeed may rely on any and all portions of the prior art, other documents, and expert testimony to establish that a POSITA would have been motivated to modify or combine the prior art as claimed and would have had a reasonable expectation of success in doing so. Lightspeed may also rely on any and all prior art references and systems identified herein to demonstrate the state of the art at the time of the alleged invention.

C. Invalidity Under 35 U.S.C. § 101

Lightspeed contends all Asserted Claims are invalid under 35 U.S.C. § 101. In particular, the Asserted Claims are directed to one or more abstract ideas without reciting an inventive concept sufficient to transform the nature of any claim into a patent-eligible application of the underlying abstract idea(s). The Asserted Claims are not directed to a technological innovation and do not improve the way software or computers operate. Each claim element of every Asserted Claim was well-understood, routine, and conventional around the time of the invention, as confirmed by admitted prior art recited in the specification of the Asserted Patents, previous testimony of the named inventors, the knowledge of a POSITA, and the exemplary prior art identified in these contentions

and the attached claim charts. Moreover, the Asserted Claims are directed to one or more of the following abstract ideas, alone or in combination:

- Creating and/or modifying (POS) display screens/graphical user interfaces via a network including the Internet
- Graphical user interface for modifying (POS) display screens/graphical user interfaces
- Using the Internet and a web browser to modify a graphical user interface
- Internet-accessible software for design of user interfaces and/or screen display designs
- Connecting devices via a public network (e.g., the Internet) instead of or in addition to a private network
- Creating and/or modifying a (POS) display
- Creating and/or modifying menus and/or a set of interactive menu screens
- Creating and/or modifying hierarchical menus
- Using a graphical user interface to create or edit POS screens
- Web-based (POS) software and/or system
- Network server-client based (POS) software and/or system
- Server-based configurable (POS) software and/or system
- Locating a POS system (or portions of the system) remotely to be accessible over the Internet and/or web
- Providing (POS builder) software as a subscription and/or service
- Providing known software as a web service and/or subscription service
- Building/editing POS screens and/or POS terminals in real time
- Network distribution of a (POS) application or program
- Centralized management of POS screens and/or graphical user interfaces

- Network distribution of POS screens and/or graphical user interfaces
- Modifying or using (server-client) software with a graphical user interface
- Modifying software/display screens via a web-based graphical user interface
- Browser-based access to software on a web server
- Implementing known software on or using the Internet

Lightspeed expressly reserves the right to modify and/or supplement its preliminary identification of abstract ideas to which the Asserted Claims are directed as this case proceeds, including based on claim construction, fact discovery, expert discovery, further understanding of COC's infringement contentions, or otherwise.

D. Invalidity Under 35 U.S.C. § 112

Lightspeed contends the following limitations are indefinite and/or lack written description under 35 U.S.C. § 112:

1. '640 Patent

- Claim 1
 - “build or edit said POS terminals in real time” (indefinite and lacks written description)
 - “said web servers are provided as a vendor subscription service” (indefinite and lacks written description)
 - “web server software” (indefinite and lacks written description)
 - “subscriber company's POS terminals access and repeatedly interact with said web server software, in order to perform the subscriber's desired terminal function” (indefinite and lacks written description)
 - “wherein the network comprises the Internet” (lacks written description)

2. '012 patent

- Claim 1
 - “programmatically creating or modifying said one or more POS terminals in real time over the communications network” (indefinite and lacks written description)

- “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” (indefinite and lacks written description)
- “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” (indefinite and lacks written description)
- “wherein each POS transaction is correlated with corresponding transaction data occurring at said one or more POS terminals” (lacks written description)
- Claim 2
 - “wherein instructions to the POS builder interface for programmatic creation and modification of the one or more POS terminals are not formatted in programming code” (lacks written description)
- Claim 6
 - “wherein said POS builder software is configured to provide instructions to add new terminals” (lacks written description)
- Claim 7
 - “wherein said POS builder software is configured to provide instructions to modify existing POS terminals” (lacks written description)
- Claim 8
 - “wherein said one or more POS terminals are configured to be accessible by a web browser” (lacks written description)
- Claim 9
 - “wherein said one or more POS terminals, once generated, are configured to operate independently of said web server” (indefinite and lacks written description)
- Claim 10
 - “wherein a number, shape and arrangement of selection keys or buttons for said one or more POS terminals are specified from the POS builder interface” (indefinite and lacks written description)
- Claim 11
 - “wherein items are associated with said selection keys or buttons from the POS builder interface” (indefinite and lacks written description)
- Claim 12
 - “wherein attributes are attributed to said items from the POS builder interface” (indefinite and lacks written description)

- Claim 13
 - “wherein said attributes are stored, retrievable and changeable from a database stored on said web server” (indefinite and lacks written description)

3. '793 patent

- Claim 1
 - “a network comprising the Internet” (lacks written description)
 - “configure the one or more POS terminals with the information over the network to create or modify based on the further information regarding one or more POS transactions the one or more POS screens displayed on the one or more POS terminals” (indefinite and lacks written description)
 - “wherein the further information regarding the one or more POS transactions, the information used for creating or modifying the one or more POS screens, or a combination thereof comprises one or more of employee clock information, customer add/update information, item add/update information, promotion information, loyalty point information, discount information, taxation information, item cost information, or inventory information” (indefinite and lacks written description)
 - “wherein said further information regarding the one or more POS transactions relate to one or more transactions by corresponding customers respectively associated with at least one of said one or more POS terminals” (lacks written description)
- Claim 2
 - “wherein the POS builder interface is configured to run on a computing device” (indefinite and lacks written description)
- Claim 10
 - “wherein the received information comprises information indicative of at least one of a number, shape, or arrangement of the one or more display interfaces” (indefinite and lacks written description)
- Claim 42
 - “a network comprising the Internet” (lacks written description)
 - “provisioning the one or more POS terminals with the information over the network to create, or modify based on the further information the one or more POS screens displayed on the one or more POS terminals” (indefinite and lacks written description)
 - “wherein the further information regarding the one or more POS transactions, the information used for creating or modifying the one or more POS screens, or a combination thereof comprises one or more of employee clock information, customer add/update information, item add/update

information, promotion information, loyalty point information, discount information, taxation information, item cost information, or inventory information” (indefinite and lacks written description)

- “wherein said further information regarding the one or more POS transactions relate to one or more transactions by corresponding customers respectively associated with at least one of said one or more POS terminals” (lacks written description)

- Claim 44

- “a network comprising the Internet” (lacks written description)
- “the information used for creating or modifying the POS screens (indefinite)
- “further information regarding one or more POS transactions corresponding to the one or more items” (indefinite)
- “configure the one or more POS terminals with the information over the network to create, or modify based on the further information the functionality of the one or more POS terminals” (indefinite and lacks written description)
- “wherein the further information regarding the one or more POS transactions, the information used for creating or modifying the one or more POS screens, or a combination thereof comprises one or more of employee clock information, customer add/update information, item add/update information, promotion information, loyalty point information, discount information, taxation information, item cost information, or inventory information” (indefinite and lacks written description)
- “wherein said further information regarding the one or more POS transactions relate to one or more transactions by corresponding customers respectively associated with at least one of said one or more POS terminals” (lacks written description)

Lightspeed asserts the above claims of the Asserted Patents are invalid for failure to meet the requirements of 35 U.S.C. § 112(a) and 35 U.S.C. § 112(b) (and the equivalent pre-AIA paragraphs). In particular, these claims include terms and phrases that lack any corresponding disclosure in the Asserted Patents to convey that the inventors were in possession of the full scope of the invention as claimed as of the alleged priority date of the Asserted Patents. Additionally, the identified claim terms and phrases, viewed in light of the specification and prosecution history, fail to inform those skilled in the art about the scope of the invention with reasonable certainty. The Court’s rules and orders do not require Lightspeed to identify issues of enablement in these

contentions, and Lightspeed reserves the right to raise issues of enablement as to all Asserted Claims at the appropriate time in this case.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on the 16th day of December 2022, I served the foregoing to the following counsel of record via email:

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