

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

STARBUCKS CORPORATION

Petitioner

v.

AMERANTH, INC.

Patent Owner

CASE: To Be Assigned

Patent No. 6,384,850 B1

**PETITION FOR COVERED BUSINESS METHOD PATENT REVIEW
OF
U.S. PATENT NO. 6,384,850 B1**

TABLE OF CONTENTS

	Page
EXHIBIT LIST	iv
I. INTRODUCTION	1
II. MANDATORY NOTICES UNDER 37 C.F.R. § 42.8(b)	2
A. REAL PARTY IN INTEREST	2
B. RELATED MATTERS	2
C. LEAD AND BACK-UP COUNSEL	3
D. SERVICE INFORMATION	4
III. REQUIREMENTS FOR COVERED BUSINESS METHOD PATENT REVIEW	4
A. GROUNDS FOR STANDING	4
1. Eligibility Based on Infringement Suit	5
2. Eligibility Based on Lack of Estoppel by Other AIA Trials	5
3. The '850 Patent is a Covered Business Method Patent	5
B. IDENTIFICATION OF CHALLENGE.....	13
1. Claims Challenged	13
2. The Prior Art	13
3. Statutory Grounds of Challenge and Legal Principles	14
4. Supporting Evidence Relied Upon For The Challenge	16
5. Claim Construction	16
6. How Claims Are Unpatentable Under Statutory Grounds	16
IV. OVERVIEW OF THE '850 PATENT	17
A. SUMMARY OF THE '850 PATENT.....	17
B. SUMMARY OF PROSECUTION FILE HISTORY.....	21
C. SUMMARY OF CBM2014-00015 PROCEEDING	22
D. PATENT OWNER'S INTERPRETATION OF CHALLENGED CLAIMS IN LITIGATION.....	23

TABLE OF CONTENTS
(continued)

	Page
E. PROPOSED CLAIM CONSTRUCTION.....	24
F. STATE OF THE ART PRIOR TO THE '850 PATENT.....	24
1. The Internet and Web-Based Applications.....	25
2. Handheld Computing Devices	26
3. Computers in the Hospitality Industry.....	27
G. LEVEL OF ORDINARY SKILL IN THE ART	27
V. IT IS MORE LIKELY THAN NOT THAT THAT AT LEAST ONE CLAIM OF THE '850 PATENT IS UNPATENTABLE	28
A. INVALIDITY OF THE CHALLENGED CLAIMS UNDER 35 U.S.C. § 112	28
1. The “Hospitality Applications and Data” Limitations (Grounds 1-3).....	28
a. Ground 1: The Challenged Claims are Invalid for Lack of Enablement Because of the “Hospitality Applications and Data” Limitations	29
b. Ground 2: The Challenged Claims are Invalid for Being Indefinite Because of the “Hospitality Applications and Data” Limitations	31
c. Ground 3: The Challenged Claims are Invalid for Lack of Written Description Because of the “Hospitality Applications and Data” Limitations	34
2. The “Communications Control Module” Limitations	35
a. Ground 4: The Challenged Claims are Invalid for Lack of Enablement Because of the “Communication Control Module” Limitations.....	36
b. Ground 5: The Challenged Claims are Invalid for Being Indefinite Because of the “Communication Control Module” Limitations	40

TABLE OF CONTENTS
(continued)

	Page
c. Ground 6: The Challenged Claims are Invalid for Lack of Written Description Because of the “Communication Control Module” Limitations.....	41
3. Ground 7: The Challenged Claims Are Invalid for Lack of Enablement Because the Specification Fails to Disclose the “Software Libraries” that Supposedly Enable the Claimed Subject Matter	42
4. Ground 8: Each of the Challenged Claims, as a Whole, is not Enabled	43
B. INVALIDITY OF THE CHALLENGED CLAIMS FOR OBVIOUSNESS UNDER 35 U.S.C. § 103.....	44
1. Ground 9: The Challenged Claims Are Obvious Over Brandt In View Of Nethopper.....	44
2. Ground 10: The Challenged Claims Are Obvious Over Brandt In View Of Demers And Alonso	64
C. GROUND 11: INVALIDITY OF THE CHALLENGED CLAIMS UNDER § 101	68
1. The Challenged Claims Are Directed to Abstract Ideas.....	69
2. The Challenged Claims Do Not Include An “Inventive Concept” That Is “Significantly More” Than the Abstract Idea	72
3. The Challenged Claims Fail the “Machine-or-Transformation” Test	78
VI. THE GROUNDS OF INVALIDITY ARE NOT REDUNDANT	79
VII. CONCLUSION.....	80

EXHIBIT LIST

- Ex. 1001 U.S. Patent No. 6,384,850 B1 to McNally et al. (the “’850 Patent”)
- Ex. 1002 U.S. Patent No. 6,871,325 B1 to McNally, et al. (the “’325 patent”)
- Ex. 1003 Declaration of Abdelsalam Helal, Ph.D. including Appendix A (Curriculum Vitae)
- Ex. 1004 Japanese Unexamined Application No. H10-247183 to Brandt et al (“Brandt”)
- Ex. 1005 English translation of Brandt (Ex. 1004) and executed affidavit attesting to the accuracy of the English translation
- Ex. 1006 NetHopper Version 3.2 User’s Manual (“NetHopper”)
- Ex. 1007 Declaration of Wayne Yurtin with respect to NetHopper (Ex. 1006)
- Ex. 1008 Jeff Walsh, *Apple Releases MessagePad 2100 Handheld PCs*, InfoWorld, Oct. 27, 1997, at 50
- Ex. 1009 Alan Demers et al., *The Bayou Architecture: Support for Data Sharing Among Mobile Users* (“Demers”)
- Ex. 1010 IEEE Abstract for Demers
- Ex. 1011 Library of Congress catalog entry for book containing Demers
- Ex. 1012 Gustavo Alonso et al., *Exotica/FMDC: A Workflow Management System for Mobile and Disconnected Clients* (“Alonso”)
- Ex. 1013 Springer Abstract for Alonso
- Ex. 1014 Library of Congress catalog entry for book containing Alonso
- Ex. 1015 ’850 Patent Prosecution History, Nov. 29, 2000 Office Action
- Ex. 1016 ’850 Patent Prosecution History, Feb. 26, 2001 Amendment
- Ex. 1017 ’850 Patent Prosecution History, May 22, 2001 Office Action

- Ex. 1018 '850 Patent Prosecution History, July 19, 2001 Amendment
- Ex. 1019 Excerpts from John December and Mark Ginsburg, HTML & CGI Unleashed (1995)
- Ex. 1020 Excerpts from Brian Francis et al., Active Server Pages 2.0 (1998)
- Ex. 1021 Excerpts from John Rodley, Writing Java Applets (1996)
- Ex. 1022 Excerpts from Mark C. Reynolds and Andrew Woolridge, Using JavaScript (1996)
- Ex. 1023 Excerpts from Abdelsalam (Sumi) Helal et al, Any Time, Anywhere Computing, Mobile Computing Concepts and Technology (1999)
- Ex. 1024 Newton Solutions Guide, Issue 1 (1995)
- Ex. 1025 Newton Solutions Guide, Issue 2 (1996)
- Ex. 1026 Newton Connection Utilities User's Manual for the Macintosh Operating System (1997)
- Ex. 1027 Newton Connection Utilities User's Manual for Windows (1997)
- Ex. 1028 Newton MessagePad 2100 User's Manual (1997)
- Ex. 1029 Nokia 9000i Communicator Owner's Manual (1997)
- Ex. 1030 Excerpts from Douglas Boling, Programming Microsoft Windows CE (1998)
- Ex. 1031 Excerpts from Terence A. Goggin, Windows CE Developer's Handbook (1999)
- Ex. 1032 Excerpts from Evaggelia Pitoura and George Samaras, Data Management for Mobile Computing (1998)
- Ex. 1033 Excerpts from Michael L. Kasavana and John J. Cahill, Managing Computers in the Hospitality Industry (1997)
- Ex. 1034 Excerpts from Gary Inkpen, Information Technology for Travel and Tourism (1998)

- Ex. 1035 Excerpts from Paul R. Dittmer and Gerald G. Griffin, *Dimensions of the Hospitality Industry: An Introduction* (2d ed. 1997)
- Ex. 1036 Excerpts from Frank Buschmann et al., *Pattern-Oriented Software Architecture: A System of Patterns* (1996)
- Ex. 1037 F. Leymann and W. Altenhuber, *Managing Business Processes as an Information Resource*, *IBM Systems Journal*, Vol. 33, No. 2, 326-348 (1994)
- Ex. 1038 Bob Stegmaier, *Image and Workflow Library: FlowMark V2.3 Design Guidelines* (Feb. 1998)
- Ex. 1039 U.S. Patent No. 5,970,479 to Shepherd (Alice Corp. patent)
- Ex. 1040 Ameranth Press Release (April 1, 2014) – Ameranth Signs a New Patent License with Taco Bell Corp. for Ameranth’s Patented 21st Century Communications™ Data Synchronization Inventions
- Ex. 1041 Ameranth Press Release (July 30, 2014) – Ameranth’s 21st Century Communications™, ‘Data Synchronization’ Patent Licensing Program Expands, and Accelerates
- Ex. 1042 *Ameranth, Inc. v. Par Tech. Corp.*, Ameranth’s Opening Claim Construction Brief
- Ex. 1043 *Ameranth, Inc. v. Par Technology Corp.*, Transcript of Claim Construction Hearing held May 30, 2012
- Ex. 1044 *Ameranth, Inc. v. Par Technology Corp.*, Claim Construction Order
- Ex. 1045 Ameranth Complaint against Starbucks
- Ex. 1046 List of Patent Infringement Lawsuits filed by Ameranth
- Ex. 1047 CBM2014-00015, Paper 11 (Jan. 13, 2014) – Patent Owner Preliminary Response
- Ex. 1048 CBM2014-00015, Paper 20 (Mar. 26, 2014) – Institution Decision

- Ex. 1049 CBM2014-00014, Paper 19 (Mar. 26, 2014) – Order Denying Institution
- Ex. 1050 Excerpt from Microsoft Computing Dictionary (4th ed. 1999) (definition of “synchronous communications”)
- Ex. 1051 Tristan Richardson et al., Virtual Network Computing (Jan. / Feb. 1998)

I. INTRODUCTION

Pursuant to 35 U.S.C. § 321 and § 18 of the Leahy-Smith America Invents Act (“AIA”), 37 C.F.R. § 42.200 *et seq.* and 37 C.F.R. § 42.300 *et seq.*, Starbucks Corporation (“Petitioner”) petitions for covered business method patent (“CBM”) review of Claims 12-16 of U.S. Patent No. 6,384,850 B1 (the “’850 patent,” Ex. 1001), assigned to Ameranth, Inc.

This Petition shows that the ’850 patent is a covered business method patent pursuant to § 18(a)(1)(E) of the AIA, and that it is more likely than not that at least one of Claims 12-16 of the ’850 patent is not patentable (“Challenged Claims”) under pre-AIA 35 U.S.C. §§ 112, 103, and/or 101.

The ’850 patent relates generally to “an information management and synchronous communications system and method [that] facilitates database equilibrium and synchronization with wired, wireless, and Web-based systems”(Ex.1001 at Abstract) for computerizing hospitality-related activities such as ordering food and making reservations. The ’850 patent specification lacks meaningful and sufficient description and disclosure supporting the Challenged Claims. As shown by the evidence and analyses in this Petition, the Challenged Claims are invalid under pre-AIA 35 U.S.C. § 112 for lack of enablement, for being indefinite, and for lack of written description.

The Challenged Claims are also invalid under pre-AIA 35 U.S.C. § 103 as

being obvious over the prior art. The primary prior art reference relied upon is a published patent application filed by IBM and describes IBM and other technologies for making applications accessible over the Internet including to wireless handheld devices. The IBM prior art covers hospitality applications – a car rental application.

Furthermore, the Challenged Claims are also patent-ineligible and invalid under pre-AIA 35 U.S.C. § 101 because they are directed to abstract ideas such as ordering food and other merchandise and because they recite only generic computer implementation of the abstract ideas.

10 **II. MANDATORY NOTICES UNDER 37 C.F.R. § 42.8(b)**

A. REAL PARTY IN INTEREST

Starbucks Corporation is the sole real party in interest under 35 U.S.C. §322(a)(2) and 37 C.F.R. §42.8(b)(1).

B. RELATED MATTERS

15 The '850 patent has been asserted against Petitioner along with U.S. Patent Nos. 6,871,325 B1 (the “'325 patent”) and 8,146,077 B2 (the “'077 patent”) in a patent infringement lawsuit brought by Patent Owner, *Ameranth, Inc. v. Starbucks Corp.*, Case No. 3-13-cv-01072, filed in the Southern District of California on May 6, 2013. Ex. 1045. To the best of Petitioner’s knowledge, Patent Owner has also
20 sued more than thirty-five other defendants in different civil actions filed between September 2012 and August 2013, including Apple Inc., Hilton Resorts Corp.,

Best Western International, Inc., Expedia, Inc., TicketMaster, LLC , Pizza Hut, Inc. and OpenTable, Inc. Ex. 1046. These cases have been consolidated with *Ameranth, Inc. v. Pizza Hut, Inc.*, No. 3-11-cv-01810, filed in the Southern District of California on Aug. 15, 2011.

5 Claims 1-11 of the '850 patent are currently subject to CBM review under § 101 in instituted PTAB Case No. CBM2014-00015 filed by thirty-five parties including Petitioner Starbucks. Ex. 1048.

 A petition for CBM review of Claims 12-16 of the '850 patent under CBM2015-00080 was filed on Feb. 19, 2015 by Apple, Inc. et al. Petitioner
10 Starbucks did not file that petition and is not a real party-in-interest in the CBM2015-00080 proceeding. None of the invalidity grounds raised herein are raised in the CBM2015-00080 proceeding.

C. LEAD AND BACK-UP COUNSEL

 Pursuant to 37 C.F.R. §§ 42.8(b)(3) and 42.10(a), Petitioner appoints **Bing**
15 **Ai** (Reg. No. 43,312) as its lead counsel, and **Patrick J. McKeever** (Reg. No. 66,019) and **Yun L. Lu** (Reg. No. 72,766) as its back-up counsel. Petitioner also requests authorization to file a motion for **Matthew Bernstein** to appear *pro hac vice*, as Mr. Bernstein is an experienced patent litigation attorney, is lead counsel for Petitioner in the district court litigation, and has an established familiarity with
20 the subject matter at issue in this proceeding. Petitioner intends to file such a

motion once authorization is granted. Pursuant to 37 C.F.R. § 42.10(b), an executed Power of Attorney is concurrently filed.

D. SERVICE INFORMATION

Petitioner identifies the following service information for its counsel and
5 hereby consents to electronic service under 37 C.F.R. §§ 42.8(b)(4) and 42.6(e):
Perkins Coie LLP, 11988 El Camino Real, Suite 350, San Diego, CA 92130, 858-
720-5700 (Phone), 858-720-5799 (Fax) and [PerkinsServiceStarbucks-CBM
@perkinscoie.com](mailto:PerkinsServiceStarbucks-CBM@perkinscoie.com) (E-mail).

**III. REQUIREMENTS FOR COVERED BUSINESS METHOD PATENT
10 REVIEW**

This Petition complies with all requirements for CBM under relevant
sections of 37 C.F.R. § 42, *et seq.* and should be accorded a filing date as the date
of filing of this Petition because requirements under 37 C.F.R. §§ 42.304, 42.205
and 42.15 are satisfied pursuant to 37 C.F.R. § 42.206. The Director is authorized
15 to charge all applicable fees under 37 C.F.R. § 42.15(b) and any additional fees to
Perkins Coie Deposit Account No. 50-5252.

A. GROUNDS FOR STANDING

Pursuant to 37 C.F.R. § 42.304(a), Petitioner hereby certifies that the '850
patent is a covered business method patent under AIA §§ 18(a)(1)(B) and 18(d)(1)
20 as further explained in this Petition, that Petitioner meets the eligibility
requirements of 37 C.F.R. § 42.302, and that Petitioner is not barred or estopped

from requesting CBM review challenging Challenged Claims of the '850 patent on the grounds identified herein. Specifically, Petitioner has the standing, and meets all requirements, to file this Petition under 35 U.S.C. §§ 325(a)(1), 325(b), 325(e)(1) and 315(e)(1); and 35 C.F.R. §§42.72(d)(1), 42.302 and 42.303.

5 **1. Eligibility Based on Infringement Suit**

Patent Owner Ameranth has sued Petitioner Starbucks alleging that Starbucks' mobile payment technology and its online store infringes the '850 patent in Case No. 3-13-cv-01072. Ex. 1045. Pursuant to AIA § 18(a)(1)(B) and 37 C.F.R. § 42.302(a), Petitioner is eligible to file this Petition.

10 **2. Eligibility Based on Lack of Estoppel by Other AIA Trials**

Petitioner is not barred or estopped from requesting CBM review of the Challenged Claims of the '850 patent on the grounds identified in this Petition. Nor is Petitioner estopped from pursuing this petition under 35 U.S.C. §§ 325(e)(1) and 315(e)(1) and 37 C.F.R. §§ 42.73(d)(1) and 42.302(b). Case No. CBM2014-
15 00015 by this Petitioner was instituted for trial only as to Claims 1-11 of the '850 patent (Ex. 1048), whereas this Petition challenges Claims 12-16. Accordingly, there can be no final written decision from an AIA trial involving this Petitioner on the Challenged Claims requested in this Petition.

3. The '850 Patent is a Covered Business Method Patent

20 The '850 patent is eligible for CBM review because it constitutes a covered business method patent as defined under AIA § 18(d)(1) and 37 C.F.R. § 42.301.

A “covered business method patent” is a patent that “claims a method or corresponding apparatus for performing data processing or other operations used in the practice, administration or management of a financial product or service, except that the terms does not include patents for technological inventions.” AIA § 18(d)(1). This definition encompasses patents “claiming activities that are financial in nature, incidental to a financial activity or complementary to a financial activity.” Final Rule, 77 Fed. Reg. 48,734, 48,735 (Aug. 14, 2012). A single claim directed toward a covered business method makes every claim of the patent eligible for CBM review. *Id.* at 48,736.

As explained below, because at least Claim 1 (not challenged in this Petition) and challenged Claim 12 establish that the ’850 patent satisfies the Covered Business Method Patent definition under Section 18(d)(1) of the AIA, all claims of the ’850 patent, including Claims 12-16 that are challenged in this Petition, are eligible for CBM review.

a. Claim 1 Establishes that the ’850 Patent is a Covered Business Method Patent

(i) Claim 1 Relates to a Financial Product or Service

As the Board previously found in CBM2014-00015, Claim 1 of the ’850 patent is directed to an apparatus that corresponds to an activity that is at least incidental or complementary to an activity financial in nature and the claim therefore meets the “financial product or service” components under the definition

in Section 18(d)(1) of the AIA. *See* Ex. 1048 at 9-14. Specifically, Claim 1 is directed to a “system for generating and transmitting menus.” Ex. 1001 at 14:48-49. Claim 2 recites that the menu is a “restaurant menu,” which is for ordering and purchasing food offered by a restaurant. *Id.* at 15:12-14. The ’850 patent specification states that the claimed menus are used for ordering and purchasing of food and merchandise. *Id.* at 3:43-52; 14:13-17; 14:23-26. The specification describes the use of the claimed invention to facilitate ordering and purchasing merchandise over the Internet: “The user may select multiple items in this manner and then enter a credit card number to pay for the purchases. The retailer processes the transaction and ships the order to the customer. As can be appreciated, ordering merchandise can also be done from menus. The generation of menus of items or merchandise for sale over the internet is readily accomplished by the menu generation approach of the present invention.” *Id.* at 12:58-65. Menus are generated and downloaded to point-of-sale (POS) terminals. *Id.* at 6:22-25, 10:14-33. The ’850 patent further describes the generation of menus for “remote ordering” and purchasing. *Id.* at 14:13-29.

In view of the above, the system for generating and transmitting menus recited in Claim 1 is for facilitating ordering and purchasing at restaurants and other hospitality establishments, and ordering and purchasing of other merchandise using menus. The ordering and purchasing of food and other merchandise

generates revenue. Ex. 1048 at 11 (“Menus are used in ordering, which pertains to the sale of a product, which generates revenue.”). Such revenue generation is clearly “financial in nature, incidental to a financial activity or complementary to a financial activity.” *Id.* at 10-11. Therefore, the subject matter of Claim 1 satisfies the first requirement of AIA § 18(d)(1). *Id.* at 11.

(ii) Claim 1 Does Not Recite a “Technological Invention”

Claim 1 of the ’850 patent does not fit within the exception to a covered business method patent review because the claimed subject matter as a whole is not directed toward a technological invention. To qualify as a technological invention, the claimed subject matter as a whole must (1) recite a technological feature that is novel and unobvious over the prior art, and (2) solve a technical problem using a technical solution. 37 C.F.R. § 42.301(b). In the CBM2014-00015 proceeding, the Board correctly found that neither prong applies to Claim 1 of the ’850 patent. Ex. 1048 at 14.

Claim 1 fails under the first prong because it does not recite a novel or unobvious technological feature. *Id.* at 13. The claim merely recites known technologies to achieve normal, expected, and predictable results. *Id.* at 12-13; Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,763-64 (Aug. 14, 2012). Claim 1 recites a CPU, a data storage device, an operating system including a graphical user interface (“GUI”), and application software. Ex. 1001 at 14:48-

15:11. The recited software enables a user to generate a menu using the GUI and then transmit it. *Id.*; Ex. 1048 at 12. The specification acknowledges that GUI-based applications for manipulating data items are conventional. Ex. 1001 at 4:59-5:32, 5:55-63. The specification suggests the use of off-the-shelf software such as a
5 Windows operating system on the workstations and server (*id.* at 5:44-54), Windows CE on the handheld devices (*id.* at 10:63-11:3), and Microsoft’s ActiveX Data Objects API for database access (*id.* at 10:34-39). To the extent any custom software is required, the ’850 patent specification states that the software is generic: “The software applications for performing the functions falling within the
10 described invention can be written in any commonly used computer language. The ***discrete programming steps are commonly known*** and thus programming details are not necessary to a full description of the invention.” *Id.* at 11:43-48 (emphasis added). Therefore, Claim 1 recites a known combination of known prior art components or features and does not recite a technological feature that is novel and
15 unobvious over the prior art.

Claim 1 also fails under the second prong of the “technological invention” test because the claimed subject matter as a whole does not solve a technical problem using a technical solution. Far from solving a technical problem, Claim 1 is directed to a system for generating and transmitting menus to solve a ***business***
20 ***problem***. The claimed system purportedly “solv[es] the problem of converting

paper-based menus or Windows® PC-based menu screens to small PDA-sized displays and Web pages” (*id.* at 3:32-35) and thus “provides a way to turn a complicated, time-consuming task into a simple process” (*id.* at 3:52-58). As discussed above, to the extent Claim 1 recites any technological limitations, they were all well-known in the prior art. Therefore, Claim 1 does not provide a technical solution to solve a technical problem.

In view of the above, Claim 1 fails both requirements for a “technological invention” and is a covered business method patent claim under AIA § 18(d)(1).

b. Claim 12 Establishes that the ’850 Patent is a Covered Business Method Patent

(i) Claim 12 Relates to a Financial Product or Service

Claim 12 of the ’850 patent meets the “financial product or service” aspect of the CBM definition. Claim 12 is directed to “an information management and synchronous communications system for use with wireless handheld computing devices and the internet” for computerizing hospitality activities such as ordering food for purchase.¹ Ex. 1001 at 1:33-37 (until now, no “information management and communication capability” for use in “restaurant ordering”); 2:33-36 (“paper-

¹ This is also confirmed by the ’325 patent, a continuation of the ’850 patent, which claims the *identical* system recited by Claim 12 of the ’850 patent and adds “wherein the synchronized data relates to *orders*.” Ex. 1002 at 17:4-26 (Claim 11).

based ordering” has “persisted in the face of widespread computerization”).

Claim 12 recites “hospitality applications” six times. *Id.* at 16:1-22. The primary hospitality applications in the ’850 patent are for ordering and purchasing. *Id.* at 3:43-46 (wireless handhelds enable “shorter order taking and check paying 5 times”); 12:1-4 (“A further aspect of the invention is the use of the menus ... to place orders from wireless remote handheld devices or from remote locations through the internet.”); 12:41-43 (“The hyperlink methodology is contemplated for use in accordance with the preferred embodiment to transmit orders via the internet.”); 14:13-17 (“[T]he synchronous communication aspect of the invention” 10 is “equally applicable to table-based, drive-thru, internet, telephone, wireless or other modes of customer order entry.”); *id.* at 3:40-58, 12:41-61.

Ordering is part of the purchasing process which generates revenue. Ex. 1048 at 11 (“[O]rdering ... pertains to the sale of a product, which generates revenue.”). Such revenue generation is clearly “financial in nature, incidental to a 15 financial activity or complementary to a financial activity.”

In addition, Patent Owner has accused Petitioner’s “mobile payment processing” application of infringement. Ex. 1045 at ¶¶ 20, 27. In prior litigation, Patent Owner argued that “hospitality applications” should be construed to include payment processing, and the court agreed. Ex. 1042 at 13, 15; Ex. 1044 at 6-7. 20 Payment processing is financial in nature. Ex. 1049 at 11 (payment processing

claim satisfies the “financial product or service” aspect of CBM definition).

Thus, Claim 12 satisfies the first requirement of the CBM definition.

(ii) *Claim 12 Does Not Recite a “Technological Invention”*

The technological invention exception does not apply to Claim 12. The
5 claim does not recite a novel and unobvious technological feature, but instead
recites well-known computer technologies such as a central database, a wireless
handheld computing device, a web server, a web page, an application program
interface (API) and a communications control module. Those recited features of
Claim 12 are disclosed by the cited prior art references in this Petition and the
10 claimed subject matter of Claim 12 as a whole is obvious and invalid as discussed
in detail in § V(B) of this Petition. As noted above, the specification confirms that
any software necessary to practice the purported invention can be implemented
using “commonly known” programming steps. Ex. 1001 at 11:24-48. The
components recited in Claim 12 achieve nothing more than “the normal, expected,
15 or predictable result of [their] combination.” 77 Fed. Reg. at 48,763-64.

Claim 12 also fails the second prong of the technological invention
exception because it does not solve a technical problem using a technical solution.
Claim 12 is directed to a system for computerizing paper-based hospitality
activities such as ordering, waitlists, and reservation management to improve
20 efficiency. Ex. 1001 at 3:43-46 (“With the proper wireless handheld system in

place, restaurants can experience increased table turns from improved server [*i.e.*, waiter] productivity and shorter order taking and check paying times.”). As noted above, Claim 12 uses typical hardware elements and software programmed using commonly known programming steps. Therefore, Claim 12 does not solve a technical problem using a technical solution. Claim 12 thus fails both requirements for a “technological invention” under AIA § 18(d)(1).

In view of the above, at least Claims 1 and 12 of the ’850 patent are CBM-eligible claims and do not fall within the technological invention exception.

Therefore, all the Challenged Claims (12-16) are eligible for CBM review.

As such, the ’850 patent is eligible for CBM review.

B. IDENTIFICATION OF CHALLENGE

Pursuant to 37 C.F.R. §§ 42.304(b) and 42.22, the precise relief requested by Petitioner is that the Board institute a CBM trial on, and cancel Claims 12-16 because they are invalid on the grounds and evidence presented in this Petition.

1. Claims Challenged

Claims 12-16 of the ’850 patent (the “Challenged Claims”) are challenged.

2. The Prior Art

The prior art references relied upon are briefly described below.

Brandt (Ex. 1004). Japanese Published Appl. No. H10-247183 (“Brandt”) is a publication of a patent application filed in Japan by IBM on December 16,

1997. Exhibit 1005 is a certified English translation of Brandt. Brandt claims priority to U.S. Patent Application No. 08/780,015, which was earlier filed on Dec. 23, 1996 (and which later issued as U.S. Patent No. 5,892,905). Brandt was published in Japan on Sept. 14, 1998 and is prior art under 35 U.S.C. § 102(b).

5 **NetHopper (Ex. 1006).** NetHopper Version 3.2 User’s Manual (“NetHopper”) is a user manual for the NetHopper web browser which was included on Apple Newton PDA devices. NetHopper was publicly available in 1997 and is prior art under 35 U.S.C. § 102(b). *See* Ex. 1007 (declaration of Wayne Yurtin); Ex. 1008 (InfoWorld article).

10 **Demers (Ex. 1009).** Alan Demers et al., The Bayou Architecture: Support for Data Sharing Among Mobile Users (“Demers”) is a 1994 conference paper that was published by IEEE in 1995 and is prior art under 35 U.S.C. § 102(b). *See* Ex. 1010 (IEEE abstract); Ex. 1011 (Library of Congress record).

15 **Alonso (Ex. 1012).** Gustavo Alonso et al, Exotica/FMDC: A Workflow Management System for Mobile and Disconnected Clients (“Alonso”) is a paper published in a book in 1996 and is prior art under 35 U.S.C. § 102(b). *See* Ex. 1013 (publisher abstract); Ex. 1014 (Library of Congress record).

3. Statutory Grounds of Challenge and Legal Principles

20 The review of invalidity of Claims 12-16 of the ’850 patent requested in this Petition is governed by 35 U.S.C. §§ 101, 102, 103, and 112 that were in effect

before March 16, 2013 (pre-AIA). Further, AIA § 18 and relevant statutory provisions 35 U.S.C. §§ 321-329 that took effect on Sept. 16, 2012 govern this CBM review. In accordance with 35 U.S.C. § 321 and 37 C.F.R. § 42.304(b), CBM review of the Challenged Claims is requested on the following grounds:

5 A. Grounds 1 - 3: The Challenged Claims are unpatentable and invalid under pre-AIA 35 U.S.C. § 112 for lack of enablement, indefiniteness, and lack of written description because of the “hospitality applications and data” limitations;

 B. Grounds 4-6: The Challenged Claims are unpatentable and invalid under pre-AIA 35 U.S.C. § 112 for lack of enablement, indefiniteness, and lack of
10 written description because of the “communications control module” limitations;

 C. Ground 7: The Challenged Claims are unpatentable and invalid under pre-AIA 35 U.S.C. § 112 for lack of enablement for failing to describe the software libraries necessary to make and used the claimed invention;

 D. Ground 8: The Challenged Claims are unpatentable and invalid under
15 pre-AIA 35 U.S.C. § 112 for lack for lack of enablement for failing to describe how to make and use the claimed systems;

 E. Ground 9: The Challenged Claims are unpatentable and invalid under pre-AIA 35 U.S.C. § 103(a) as obvious over Brandt in view of NetHopper;

 F Ground 10: The Challenged Claims are unpatentable and invalid
20 under pre-AIA 35 U.S.C. § 103(a) as obvious over Brandt in view of Demers and

Alonso;

G. Ground 11: The Challenged Claims are unpatentable under pre-AIA 35 U.S.C. § 101 for claiming non-statutory subject matter.

4. Supporting Evidence Relied Upon For The Challenge

5 This Petition includes the Declaration of Dr. Abdelsalam (Sumi) Helal (Ex. 1003) which provides support for each ground of rejection raised herein and other supporting evidence in the Exhibit List which are filed herewith.

5. Claim Construction

10 The '850 patent is an unexpired patent. In a CBM review, a claim in an unexpired patent shall be given by the Patent Office “its broadest reasonable construction in light of the specification of the patent in which it appears” to one of ordinary skill in the art. 37 C.F.R. § 42.300(b); *In re Cuozzo Speed Techs. LLC*, No. 2014-130, 2015 WL 448667 (Fed. Cir. Feb. 4, 2015).

6. How Claims Are Unpatentable Under Statutory Grounds

15 Pursuant to 37 C.F.R. § 42.204 (b)(2), Section V explains how Claims 12-16 of the '850 patent are unpatentable, and includes the analyses of invalidity based on failure to meet requirements under pre-AIA 35 U.S.C. § 112 (Section V(A)), invalidity under pre-AIA 35 U.S.C. § 103(a) and the identification of where each element of the claim is found in the prior art of patents or printed publications
20 (Section V(B)), and invalidity for claiming non-statutory subject matter under pre-AIA 35 U.S.C. § 101 (Section V(C)).

IV. OVERVIEW OF THE '850 PATENT

A. SUMMARY OF THE '850 PATENT

The '850 patent is directed to computerizing hospitality-related activities using the Internet and handheld wireless devices. Claims 12-16 each recite “[a]n information management and synchronous communications system for use with wireless handheld computing devices and the internet.” Ex. 1001 at 16:1-47.²

Although the specification provides some discussion related to the Challenged Claims, much of the specification deals with “menu generation” subject matter that relates to Claims 1-11 of the '850 patent which are not challenged in this petition.

The specification of the '850 patent provides context for understanding the claimed invention. The specification acknowledges that “[t]he use of wireless handheld devices in the restaurant and hospitality industry [was] becoming increasingly pervasive.” Ex. 1001 at 3:40-43. On the other hand, “software for fully realizing the potential for handheld wireless computing devices [had] not previously been available.” *Id.* at 1:65-2:7. As a result, “paper-based ordering, waitlist and reservations management [had] persisted in the face of widespread

² The '850 patent uses “synchronous communications” to refer generally to communications in a system which synchronizes applications and data, despite its different and well-established meaning in the art. *See* Ex. 1050 at 430.

computerization in practically all areas of commerce.” *Id.* at 2:33-36.

The '850 patent purports to describe software and features that the hospitality industry had been waiting for: “The information management and synchronous communications system of the present invention features include fast
5 synchronization between a central database and multiple handheld devices, synchronization and communication between a Web server and multiple handheld devices, a well-defined API” *Id.* at 3:59-4:4. The specification of the '850 patent, however, provides no disclosure of any new technologies or new combinations of known technologies for achieving the above features. The
10 specification merely lists out purported features of the alleged invention and refers to conventional uses of technologies that were well known in the art.

The '850 patent specification fails to describe any specific computer-based approach or system that achieves synchronization between a central database, a wireless handheld computer device, a web server and a web page as recited in
15 Claim 12. None of the seven figures in the '850 patent shows an embodiment of “an information management and synchronous communications system for use with wireless handheld computing devices and the internet” recited by each of the Challenged Claims. Ex. 1001 at 16:1-47.

The '850 patent specification states that a “communications control module”
20 provides a “single point of entry [that] works to keep all wireless handheld devices

and linked web sites in synch with the backoffice server applications so that the different components are in equilibrium at any given time and an overall consistency is achieved.” *Id.* at 4:5-18 and 11:24-36. Yet the specification provides almost no information as to the implementation of the communications control module other than that it runs on a “desktop pc” and “monitors and routes all communications to the appropriate devices.” *Id.* at 9:21-40.

The Challenged Claims recite a “wireless handheld computing device” but the ’850 patent specification does not disclose any novel device technologies or novel features to improve wireless communications or wireless synchronization. Although the specification briefly discusses wireless messaging between handheld devices and beepers (*id.* at 11:49-67), no specifics are provided regarding how the handheld devices communicate wirelessly with any of the system components recited in Claims 12-16. The discussion of downloading a menu onto a handheld device “in conformance with the preferred embodiment” describes a user-guided download process and it is unclear whether the device is connected wirelessly to the “desktop PC” or not. *Id.* at 6:22-25, 8:45-59.

The ’850 patent specification admits that the components of the claimed system are nothing new: “The preferred embodiment of the invention uses typical hardware elements.” *Id.* at 5:33-37. The server runs a Windows operating system and includes unspecified “web server software” and “database software.” *Id.* at

5:51-54. Other than noting that hyperlinks will probably be used (*id.* at 12:41-43), no explanation is given as to how the claimed web technologies are used in the claimed system. The handheld wireless devices run the Windows CE operating system which “provides ... built-in synchronization between handheld devices
5 [and] internet and desktop infrastructure.” *Id.* at 10:63-11:3.

The '850 patent specification states that “a set of software libraries described herein ... not only enhances the basic Windows CE® functionality by adding new features but also maximizes the full potential of wireless handheld computing devices.” *Id.* at 11:7-12. The features supposed achieved by the software libraries
10 include “fast synchronization” between a database, handheld devices, and a web server and other features recited in the Challenged Claims. *Id.* at 11:12-23. However, the specification provides no description of any software libraries, let alone software libraries that achieve the recited features. Indeed, the specification admits that the “discrete programming steps” for practicing the invention are
15 “commonly known” and that a description of the software is thus “not necessary to a full description of the invention.” *Id.* at 11:43-48.

In summary, the '850 patent describes no technology solution to address or overcome the supposed obstacles to computerization in the hospitality industry. Instead, the '850 patent merely claims a generic system composed of generic
20 computers and software and leaves it to others to work out the implementation

details. As shown by the evidence in this Petition, Claims 12-16 are invalid and must be canceled on multiple statutory grounds.

B. SUMMARY OF PROSECUTION FILE HISTORY

The file history of the '850 patent shows that the original examination of
5 Claims 12-16 was conducted with errors made by the examiner who failed to exercise the ordinary care and diligence required by the Office. In the first office action, the examiner allowed Application Claims 20-30 and 40-43. Ex. 1015. Application Claims 20-30 related to menu generation and became issued Claims 1-11 of the '850 patent. Notably, Application Claims 40-43, which became issued
10 Claims 12-15, *did not* relate to menu generation.

In explaining the reasons for allowance, the examiner stated: “The present invention is directed to an information management and synchronous communications system for generating and transmitting menus. Each independent claims 20 and 40 are identified the uniquely distinct features ‘a sub-modifier menu stored on data storage device and displayable in a window of graphical user interface, and application software for generating a second menu from first menu and transmitting second menu to a wireless handheld computing device or Web page’. The closest prior art, Cupps (US Patent No. 5,991,739) and Chen (US Patent No. 5,724,069) discloses convention of user interactive interface providing
15
20 an on-line ordering distribution, either singularly or in combination, fail to

anticipate or render the above underlined limitations obvious.” Ex. 1015 at 4
(grammatical errors and emphasis in original).

The above reasons for allowance are erroneous because Application Claim
40 did not include the “sub-modifier menu ...” limitation, nor was it directed to a
5 system “for generating and transmitting menus.” The same erroneous reasons for
allowance were repeated in a later office action. *See* Ex. 1017 at 6-7.

Following the examiner’s allowance of application claims 40-43, Patent
Owner tried to obtain some additional, similar claims. In particular, Patent Owner
added Application Claims 44-49 and 56-57 reciting similar subject matter to the
10 Challenged Claims. Ex. 1016 at 4-6. Notably, the examiner rejected all of these
variant claims based on prior art. Ex. 1017 at 4-5. After these rejections, Patent
Owner cancelled the rejected claims. Ex. 1018. The examiner issued the ’850
patent with those claims allowed in the first office action and one additional
dependent claim (issued Claim 16) that was added in the amendment.

15 **C. SUMMARY OF CBM2014-00015 PROCEEDING**

Thirty-five parties, including Petitioner Starbucks, sought CBM review of all
claims (Claims 1-16) of the ’850 patent under 35 U.S.C. §§ 101 and 112 in the
CBM2014-00015 proceeding. The Board instituted review of Claims 1-11 under
the § 101 ground but denied institution of the other grounds because the petition
20 failed to make the proper showing for those grounds. Ex. 1048.

As shown by the evidence and analysis in this Petition, compelling new grounds of invalidity under 35 U.S.C. §§ 101, 103, and 112 are raised herein and were not put before by the Board in the CBM2014-00015 proceeding.

5 **D. PATENT OWNER’S INTERPRETATION OF CHALLENGED CLAIMS IN LITIGATION**

In litigation, Patent Owner broadly interprets the claims to cover conventional client/server configurations in which application data is pulled from a central database and displayed on a client device. For example, Patent Owner framed the invention as follows during a claim construction hearing: “On this slide,
10 we see the client server nature of the invention. We have a central database, central computer, central server that communicates out through the internet to provide different types of users on different types of devices the same information that’s maintained back at this central database server. *This client server system provides a mechanism which results in the same information presented to any
15 one of these users, no matter the kind of device.*” Ex. 1043 at 11:3-11.

Patent Owner asserts that the “synchronized” limitation simply requires that consistent data is displayed on different client devices. Ex 1042 at 28 (“‘Synchronized’ in the claims means that the same information provided to users via the display of user interfaces is presented consistently to different client
20 devices in a client/server system.”); *id.* at 29 (“‘[S]ynchronizing’ hospitality applications and data in the claimed system is the maintenance of consistency of

information presented to user for ‘use’ on disparate devices in the system.”).

Patent Owner contends that the claims cover handheld devices which access web-based hospitality applications. Ex. 1043 at 22:17-21 (“[F]or example, a single wireless handheld device using a web browser delivering HTML-based web pages
5 connected into the central database over the internet, would satisfy the explicit claim recitations. Nothing more than that is required.”). Patent Owner has accused mobile websites of infringement.

E. PROPOSED CLAIM CONSTRUCTION

Petitioner proposes construction of certain claim terms below pursuant to the
10 broadest reasonable interpretation (BRI) standard for covered business method patent review. The proposed BRI claim constructions are offered only to comply with 37 C.F.R. § 42.300(b) and for the sole purpose of this Petition, and thus do not necessarily reflect appropriate claim constructions to be used in litigation and other proceedings where a different claim construction standard applies.

15 The proposed BRI construction of each term is the ordinary meaning of the term, including “communications control module” (e.g., Ex. 1001 at 9:21-40 and 11:24-42; 4:5-23, 4:49-51) and “hospitality applications” (e.g., *Id.* at 1:51-55; 1:59-2:32, 4:5-8, and 11:24-42).

F. STATE OF THE ART PRIOR TO THE ’850 PATENT

20 The ’850 patent specification offers an inaccurate and incomplete

characterization of the state of the art around its filing date of September of 1999.

As shown by the evidence provided in this Petition, including the cited prior art references and Declaration of Dr. Abdelsalam (Sumi) Helal (Ex. 1003), the claimed technologies were developed and in use well before 1999.

5 1. The Internet and Web-Based Applications

The World Wide Web was experiencing explosive growth in the mid 1990's, and websites were becoming more interactive and sophisticated. The introduction of the Common Gateway Interface (CGI) provided a way for web servers to interact with other computer programs. CGI programs could receive user input and dynamically generate HTML for the web server to provide to the client. Ex. 1019 at 382-390. CGI programs could also be used to retrieve data from databases and include the data in a dynamically generated web page for the client. *Id.*

In late 1996 Microsoft introduced Active Server Pages (ASP). ASP was a server-side scripting technology for creating dynamic and interactive web applications. Ex. 1020 at 52. ASP "pages" could include HTML and server-side scripts. When a page was requested by a client, the server would process the ASP page and execute the scripts before providing the page to the client. *Id.* The ASP scripts could be used to dynamically generate the HTML for the web page. *Id.* at 67-75. In addition, ASP could use Microsoft's ActiveX Data Objects API to integrate database functionality into interactive web pages. *Id.* at 58-59, 75-76.

2. Handheld Computing Devices

By the mid-to-late 1990s, there was a wide array of handheld computing devices on the market. Ex. 1011 at 32-42. Beginning in 1993, Apple released a series of “Newton” PDAs that could be used with PCMCIA card-based wireless modems. Ex. 1024 at 5-7, 36, 38. The Newton devices supported synchronization of applications and files with a computer. Ex. 1026 at 59-66; Ex. 1027 at 51-58; Ex. 1028 at 125-129. The Newton devices also included a web browser called NetHopper. Ex. 1006. Another device was the Nokia 9000i Communicator which combined a handheld computer and a cell phone. Ex. 1023 at 40-41; Ex. 1029. The Communicator included a web browser and could connect to a PC in order to transfer files and data. Ex. 1029 at 7-1 – 7-4 and 10-6 – 10-10.

Microsoft first released the Windows CE operating system in the fall of 1996 and release version 2.0 in the fall of 1997. Ex. 1030 at xii – xv. Windows CE was designed for small computers, including PDAs. Ex. 1031 at 12-38. There were Windows CE-compatible products from Oracle and Sybase to support database functionality on handheld computers, including synchronization between local data on the handheld computers and network databases. *Id.* at 335 – 358.

Software design to facilitate mobile computing was a hot topic in the academic literature during this time as well. Ex. 1032 at 15-25 (discussing software architecture for mobile computing) and 111-135 (discussing various

mobile computing research projects). The literature addressed the practical and commercial mobile computing challenges of the day such as disconnected operation, weak connectivity, and database replication. *Id.*

3. Computers in the Hospitality Industry

5 The use of the Internet and handheld computing devices was common in the hospitality industry by the mid-to-late 1990s. The '850 patent specification itself acknowledges, for example, that “[t]he use of wireless handheld devices in the restaurant and hospitality industry [was] becoming increasingly pervasive as restaurant owners and managers become more aware of the benefits.” Ex. 1001 at 10 3:40-43. A 1997 book, *Managing Computers in the Hospitality Industry*, similarly states that “[w]ireless order-entry terminals” including “hand-held terminals (HHTs)” were already “revolutionizing POS technology.” Ex. 1033 at 168.

 Also by 1997, “[m]any airlines, hotel companies, and car rental firms offer[ed] online reservation services through their Web sites.” *Id.* at 103-107; Ex. 15 1034 at 196-206 (describing online hotel, flight, and rental car booking capabilities of Microsoft’s Expedia website). Hospitality systems using conventional client / server system architectures were also well known. Ex. 1033 at 285-287.

G. LEVEL OF ORDINARY SKILL IN THE ART

 A person of ordinary skill in the art of the '850 patent (POSITA) would have 20 had a Bachelor’s degree in computer science, computer engineering, or electrical

engineering and two years of experience developing web-based software or other software for client/server systems. The POSITA would be familiar with relational databases, handheld computing devices, and basic wireless technologies. This description is approximate and additional programming experience could make up
5 for less education and vice versa. Ex. 1003, Helal Decl., § V(C).

V. IT IS MORE LIKELY THAN NOT THAT THAT AT LEAST ONE CLAIM OF THE '850 PATENT IS UNPATENTABLE

This Petition meets the CBM threshold set forth in 35 U.S.C. § 324(a) because “at least 1 of the claims challenged in the petition is unpatentable.” 35
10 U.S.C. § 324(a). As explained below pursuant to 37 C.F.R. §§ 42.304(b)(4) and 42.304(b)(5), Claims 12-16 are unpatentable under pre-AIA 35 U.S.C. §§ 112, 103(a), and 101 at least for the eleven grounds that are listed in Section III(D)(3).

A. INVALIDITY OF THE CHALLENGED CLAIMS UNDER 35 U.S.C. § 112

15 The Challenged Claims suffer multiple defects and thus are invalid under pre-AIA 35 U.S.C. §112. Because the same claim limitations implicate multiple grounds of invalidity, Petitioner will address the invalidity grounds on a limitation-by-limitation basis. Dr. Helal provides additional analysis and support for these grounds in his declaration, Ex. 1003, at § VIII(A).

20 **1. The “Hospitality Applications and Data” Limitations (Grounds 1-3)**

Each of the Challenged Claims recites “an information management and synchronous communications system for use with wireless handheld computing

devices and the internet.” The first four claim elements recite that “hospitality applications and data” are stored in four locations: (1) in “a central data base,” (2) on “at least one wireless handheld computing device,” (3) on “at least one Web server,” and (4) on “at least one Web page.” Ex. 1001 at 16:4-13 (Claim 12).

5 Another limitation recites “wherein applications and data are synchronized between the central data base, at least one wireless handheld computing device, at least one Web server and at least one Web page.” *Id.* at 16:16-18 (Claim 12).

a. Ground 1: The Challenged Claims are Invalid for Lack of Enablement Because of the “Hospitality Applications and Data” Limitations

10 “To be enabling the specification of a patent must teach those skilled in the art how to make and use the full scope of the claimed invention without undue experimentation.” *Magsil Corp. v. Hitachi Global Storage Techs, Inc.*, 687 F.3d 1377, 1380 (Fed. Cir. 2012); 35 U.S.C. § 112, ¶ 1. ***“It is the specification, not the knowledge of one skilled in the art, that must supply the novel aspects of an invention in order to constitute adequate enablement.”*** *Genentech, Inc. v. Novo Nordisk, A/S*, 108 F.3d 1361, 1366 (Fed. Cir. 1997).

The specification of the ’850 patent does not describe any system in which hospitality applications and data are stored in the four different locations recited in the Challenged Claims and synchronized between those locations. None of the
20 figures depict any such system. *See In re Wands*, 858 F.2d, 731, 737 (Fed. Cir. 1988) (“absence of working examples” indicates that undue experimentation would

be required to practice claims). The “hospitality applications and data” limitations are not discussed individually either. For example, the specification includes no mention of any hospitality applications that are contained in a database, stored on a web server, or stored on a web page. The specification briefly mentions

5 “synchronization” between devices (*e.g.*, 3:59-63, 4:14-23; 10:57-62; 10:65-11:1), but the discussion is so vague and abstract that it fails to explain what it means for “applications and data” to be synchronized between the four different locations recited in the claims, let alone teach how such synchronization can be achieved.

Given the lack of guidance in the ’850 patent specification, a POSITA would
10 not understand how to make and use a system in which “hospitality applications and data” are stored in the four recited locations and synchronized between those locations. The ’850 patent specification fails to teach how hospitality applications can be stored *in a database*. Databases typically contain application data, not applications themselves. The notion of storing applications *on a web page* is also
15 ambiguous. Web pages can be part of an application but web pages do not typically store applications on them.

The ’850 patent specification also fails to teach how hospitality data is stored on a web page as claimed. Some web pages are static and include content that does not change. On the other hand, when web pages are used to display
20 information that does change, the standard approach has long been to dynamically

generate the web page. *See supra* § IV(F)(1). When web pages are generated dynamically, the data is retrieved and inserted into the page at the time the client requests the page—the data is not stored on a web page or on the web server.

The specification also does not explain synchronizing *both applications and data* as claimed. *See* Ex. 1048 at 15-16 (“synchronized” limitation refers to “system’s ability to synchronize applications and data”). Synchronizing applications—as opposed to just application data—is ambiguous. Synchronizing applications between a database, a handheld device, a web server, and a web page is bewildering to a POSITA. The specification neither explains what synchronization of applications means nor teaches how it can be accomplished.

Claims 12-16 are thus invalid for lack of enablement under pre-AIA 35 U.S.C. § 112, ¶ 1 with respect to the “hospitality applications and data” limitations and must be canceled. *See also* Helal Decl., Ex. 1003, at § VIII(A)(1)(a).

b. Ground 2: The Challenged Claims are Invalid for Being Indefinite Because of the “Hospitality Applications and Data” Limitations

“[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 skilled in the art about the scope of the invention.”

Nautilus Inc. v. Biosig Instr., Inc., 134 S. Ct. 2120, 2124 (2014); 35 U.S.C. § 112, ¶

2. In view of the numerous ambiguities associated with the “hospitality applications and data” limitations, the Challenged Claims fail to particularly point

out and distinctly claim the subject matter of the claimed invention.

The Challenged Claims do not specify any relationships between the “hospitality applications and data” at one location and the “hospitality applications and data” at another location. For example, there are no antecedent basis relationships among the “hospitality applications and data” stored at the four different locations. It is unclear whether the “hospitality applications and data” stored at the four different recited locations are associated with the same hospitality applications or different hospitality applications. For example, if the hospitality application in the central database were an ordering application, must there be ordering applications stored at the other three locations as well?

Assuming the four separately recited “hospitality applications and data” stored at the four locations in the Challenged Claims are understood to refer to the same hospitality applications, Claims 12-16 would still be indefinite. Under this interpretation, Claims 12-16 fail to particularly point out and distinctly claim the subject matter related to the four separately recited “hospitality applications and data” at the four locations, *e.g.*, whether the four separately recited “hospitality applications and data” at the four locations are different components of some larger scale hospitality applications or whether they are replicas of the same hospitality applications. Given this ambiguity in Claims 12-16, it is also unclear what the additional limitation requiring “wherein applications and data are synchronized

between the central data base, at least one wireless handheld computing device, at least one Web server and at least one Web page” in Claims 12-16 would mean.

On the other hand, if the four separately recited “hospitality applications and data” stored at the four locations in the claimed system are understood as referring to different hospitality applications, Claims 12-16 would still be indefinite. Under this interpretation, Claims 12-16 fail to particularly point out and distinctly claim the subject matter, e.g., whether the four separately recited “hospitality applications and data” stored at the four locations have any relationships with one another. Under this interpretation, the meaning of the limitation requiring “wherein applications and data are synchronized between the central data base, at least one wireless handheld computing device, at least one Web server and at least one Web page” in Claims 12-16 is again ambiguous. For example, how would hospitality applications and data be synchronized between the central database, the handheld device, the web server, and the web page if there were different types of hospitality applications stored at those locations?

For at least these reasons, Claims 12-16 fail to inform those skilled in the art about the scope of the claimed invention with reasonable certainty and fail to particularly point out and distinctly claim the subject matter. Claims 12-16 are therefore invalid under pre-AIA 35 U.S.C. § 112, ¶ 2 for being indefinite and must be canceled. *See also* Helal Decl., Ex. 1003, at § VIII(A)(1)(b).

c. Ground 3: The Challenged Claims are Invalid for Lack of Written Description Because of the “Hospitality Applications and Data” Limitations

The written description of the '850 patent does not “reasonably convey[] to those skilled in the art that the inventor[s] had possession” of the claimed system
5 wherein hospitality applications and data are stored in the four recited locations and synchronized between those locations. *See Ariad Pharma, Inc. v. Eli Lilly and Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc).

As discussed above, there is no description of any system in which hospitality applications and data are stored in the four recited locations and
10 synchronized between those locations. *See Boston Sci. Corp. v. Johnson & Johnson*, 647 F.3d 1353, 1364 (Fed. Cir. 2011) (“Although examples are not always required to satisfy the written description requirement, the lack of any disclosure of examples may be considered when determining whether the claimed invention is adequately described.”). Further, the vague references to
15 “synchronization” in the specification do not describe synchronization of ***both applications and data*** between the four locations recited in the Challenged Claims. *See Ex. 1001* at 2:26-32; 4:18-23; 11:36-42.

With the exception of Claim 16, all of the Challenged Claims were originally filed claims. Original claims *do not* automatically satisfy the written
20 description requirement, however. *Ariad*, 598 F.3d at 1349-51. Where original claims reflect only than a “wish” or “plan” for obtaining the claimed invention, the

claims themselves do not provide a sufficient written description. *Id.* at 1351.

The Challenged Claims amount to nothing more than a “wish” or “plan” to achieve the claimed system. The claims themselves indicate that the inventors might have wished for a system that synchronized hospitality applications and data between a database, a handheld device, a web server, and a web page. However, nothing within the “four corners of the specification” (*Ariad*, 598 F.3d at 1351) reasonably conveys that the inventors “possessed” any actual solution that achieved their vision. “[A] patent is not a hunting license. It is not a reward for the search, but compensation for its successful conclusion.” *Id.* at 1353.

Claims 12-16 are thus invalid for lack of written description under pre-AIA 35 U.S.C. § 112, ¶ 1. *See also* Helal Decl., Ex. 1003, at § VIII(A)(1)(c).

2. The “Communications Control Module” Limitations

Like the “hospitality applications and data” limitations discussed above, the “communications control module” limitations of the Challenged Claims implicate multiple grounds of invalidity under pre-AIA 35 U.S.C. § 112, ¶ 1 and ¶ 2.

Each of the Challenged Claims recite a “communications control module” which “is an interface between the hospitality applications and any other communications protocol.” Ex. 1001 at 16:1-23 (Claim 12). Claims 13 – 15 further recite “wherein the communications control module provides a single point of entry for all hospitality applications and wherein the single point of entry allows

the synchronization of at least one wireless handheld computing device and at least one Web page with the central database so that at least one handheld device, at least one Web page and central database are consistent.” Ex. 1001 at 16:24-31.

5 **a. Ground 4: The Challenged Claims are Invalid for Lack of Enablement Because of the “Communication Control Module” Limitations**

The ’850 patent specification fails to provide an enabling disclosure of the claimed “communications control module.” The specification suggests that the communications control module is the key to synchronization: “The synchronous communications control module discussed above provides a single point of
10 entry The single point of entry works to keep all wireless handheld devices and linked Web sites in synch with the backoffice server (central database) so that the different components are in equilibrium at any given time and an overall consistency is achieved.” Ex. 1001 at 11:24-42; 4:5-23.

Despite its seeming importance, the communications control module is only
15 briefly discussed in a few places in the ’850 patent specification. Ex. 1001 at 9:21-40, 11:24-42, 4:5-23. The specification states that the communications control module runs on a “desktop PC” and “monitors and routes all communications to the appropriate devices.” *Id.* at 9:21-40. However, the specification offers no teachings as to (a) how the module knows which device(s) should receive any
20 given message, and (b) how the module actually communicates with a database, a web server, a web page, or a handheld device.

The specification of the '850 patent does not teach how “the communications control module is an interface between the hospitality applications and any communications protocol,” as claimed. Regarding this limitation, the specification states that the communications control module is a “layer that sits on top of any communication protocol and acts as an interface between hospitality applications and the communication protocol and can be easily updated to work with a new communication protocol without modifying the core hospitality applications.” Ex. 1001 at 4:9-13; 11:27-32. The claim language and specification suggest a software configuration like the one below in which hospitality applications run on top of the communications control module “layer” and rely on that communications control module layer to handle communications.

A POSITA would recognize that the communications control module is characterized as an “abstraction layer” which shields the



applications from the details of, and changes to, the communication protocols.

Abstraction layers were well known in the art. *See* Ex. 1036 at 31-51.

Implementing the communications control module as an abstraction layer that manages communications for the hospitality applications would explain why the module “can be easily updated to work with a new communication protocol without modifying the core hospitality applications.” Ex. 1001 at 4:11-13.

In a vacuum, there is no problem with the communications control module being an abstraction layer that manages communications and deals with communication protocols. Such a design would require the communications control module layer to be present on every device and computer that runs the hospitality applications, however, because without that layer, the applications would have no ability to communicate. The suggestion that the communications control module is a software layer that is included on all devices and computers that run hospitality applications *contradicts* the clear indications in the specification and claims that the communications control module is a centralized system component. Ex. 1001 at 9:21-40 (runs on “desktop PC”); 11:24-36 (provides a “single point of entry for all hospitality applications”); Fig. 6.

Assuming the communications control module is a centralized software component, the '850 patent specification does not explain *how* to make it “an interface between the hospitality applications and any other communications protocol” as claimed. For example, how would hospitality applications on a wireless handheld device communicate with the centralized communications control module if those applications do not understand communication protocols? How would the web server communicate with the communications control module without the use network communication protocols? How could the communication protocols within the distributed system be updated “without modifying the core

hospitality applications” on the client devices and web server? *Id.* at 4:9-13;
11:27-32. The specification of the '850 patent answers none of these questions.

Even if the Challenged Claims might be construed to only require server-side applications that are accessible to web-based clients and handheld devices (*see supra* § IV.D), the '850 patent specification fails to explain how the server-side applications would run on top of the communications control module such that the module provides an interface between the applications and a communication protocol. How would the applications communicate with the communications control module? Would the module reside on the web server? Would it provide an interface between the web-based application and the HTTP protocol? How would that work? The specification of the '850 patent is silent on these questions.

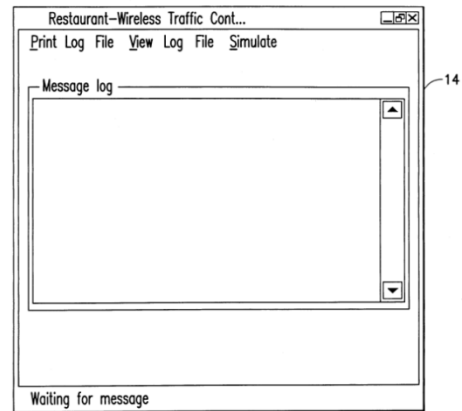


FIG.6

The only figure in the '850 patent related to the communications control module is Figure 6 which merely depicts a GUI window that is virtually empty.

The brief discussion of this figure indicates that the GUI window allows for viewing a log of communications which is “possibly useful for troubleshooting, or maintenance, but not necessary for normal operation.” *Id.* at 9:29-40. Thus, the only figure related to the “communications control module” is tangential to its

design and operation.

Nothing about Figure 6 would inform or teach those skilled in the art how to make an operational communications control module, let alone one that provides the claimed interface. In *Auto. Techs. Int'l, Inc. v. BMW of No. Am., Inc.*, the Federal Circuit invalidated claims because the specification failed to provide an enabling disclosure of electronic sensors. 501 F.3d 1274, 1282 (Fed. Cir. 2007). There, the patent included one figure with a “conceptual” view of an electronic sensor and a brief description which “provide[d] little detail concerning how the electronic sensor is built or operated.” *Id.* at 1282-83. The '850 patent's teachings are even more deficient, and the '850 patent thus fails to teach a POSITA how to make and use the claimed communications control module.

For the above reasons, the “communications control module” limitations render Claims 12-16 invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 for lack of enablement with respect to the claimed “communications control module.” See also Helal Decl., Ex. 1003, at § VIII(A)(2)(a).

b. Ground 5: The Challenged Claims are Invalid for Being Indefinite Because of the “Communication Control Module” Limitations

As discussed above, the claim language and specification provide conflicting characterizations of the communications control module as (i) a centralized software component, and (ii) an abstraction layer on each computer containing hospitality applications. A POSITA would not understand from the specification

and prosecution history whether the communications control module is a centralized module or an abstraction layer. As a result, Claims 12-16 fail to inform those skilled in the art about the scope of the invention with reasonable certainty and thus fail to particularly point out and distinctly claim the subject matter.

5 Claims 12-16 are therefore indefinite under pre-AIA 35 U.S.C. § 112, ¶ 2 and invalid. *See also* Helal Decl., Ex. 1003, at § VIII(A)(2)(b).

c. Ground 6: The Challenged Claims are Invalid for Lack of Written Description Because of the “Communication Control Module” Limitations

Nothing in the specification describes how a “communications control
10 module” actually serves as “an interface between the hospitality applications and any other communications protocol.” Indeed, as discussed above, this limitation is at odds with the statements in the specification indicating that the communications control module is a centralized system component. As such, the written description of the ’850 patent fails to reasonably convey that the applicants
15 possessed the claimed system in which a “communication control module is an interface between the hospitality applications and any other communications protocol.” A “wish” or “plan” to obtain a communications control module that provides the claimed interface is not sufficient. *See Ariad*, 598 F.3d at 1351. The Challenged Claims are therefore invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 for
20 lack of written description. *See also* Helal Decl., Ex. 1003, at § VIII(A)(2)(c).

3. Ground 7: The Challenged Claims Are Invalid for Lack of Enablement Because the Specification Fails to Disclose the “Software Libraries” that Supposedly Enable the Claimed Subject Matter

The '850 patent states that many features recited in Claim 12 are achieved
5 using inventive software libraries: “a set of *software libraries described herein in conformance with the present invention* not only enhances the basic Windows CE® functionality by adding new features but also maximizes the full potential of wireless handheld computing devices.” Ex. 1001 at 11:7-12. The features purportedly added by the “software libraries” include “fast synchronization
10 between a central database and multiple handheld devices, synchronization and communication between a Web server and multiple handheld devices, [and] a well-defined API that enables third parties ... to fully integrate with computerized hospitality applications” *Id.* at 11:12-23. These features directly map to limitations of the Challenged Claims. *Id.* at 16:1-23 (Claim 12).
15 Despite the statements quoted above, the specification does not describe any software libraries that add these features. There is not a single reference to a software library anywhere else in the specification.

If software libraries are necessary to make and use the claimed system, as the '850 patent specification suggests, the applicants had an obligation to describe
20 those software libraries in the specification. *Union Pacific Res. Co. v. Chesapeake Energy Corp.*, 236 F.3d 684, 690-691 (Fed. Cir. 2001) (claims not enabled where

inventors excluded from the specification important programming details used to achieve the invention in order to preserve them as a trade secret). Because the software libraries that are necessary to make and use the claimed system are not described in the specification, Claims 12-16 are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 for lack of enablement with respect to such software libraries. *See also* Helal Decl., Ex. 1003, at § VIII(A)(3).

4. Ground 8: Each of the Challenged Claims, as a Whole, is not Enabled

Grounds 1, 4, and 7 above address aspects of the Challenged Claims which are not enabled by the specification. The enablement grounds must also be considered together, however, because pre-AIA 35 U.S.C. § 112, ¶ 1 requires the specification to contain a description “in such full, clear, concise, and exact terms as to enable any person skilled in the art” to make and use “the invention”—which is the entire claimed system.

In order to make and use the system actually claimed in the Challenged Claims, a POSITA would need to figure out, at least, (i) how to store applications and data in the four recited locations, (ii) how to synchronize applications between the four recited locations; (iii) how to create a communications control module that routes communications to the proper devices and/or applications; (iv) how to make the communications control module an interface between the hospitality applications and any communications protocol; and (v) how to develop the

software libraries necessary to implement such a system. As discussed above in addressing Grounds 1, 4, and 7, a POSITA would find no specific and meaningful teachings in the specification that would assist with navigating these issues concerning the claimed invention.

5 The enablement requirement exists to prevent applicants from claiming subject matter they do not teach. “The enablement requirement ensures that ‘the public knowledge is enriched by the patent specification to a degree at least commensurate with the scope of the claims.’” *Promega Corp. v. Life Techs. Corp.*, 773 F.3d 1338, 1347 (Fed. Cir. 2014). “Enabling the full scope of each claims is
10 ‘part of the *quid pro quo* of the patent bargain.’” *Sitrick v. Dreamworks, LLC*, 516 F.3d 993, 999 (Fed. Cir. 2008) (citations omitted). The specification of the ’850 patent does not provide any teachings which enrich the public knowledge, and because it fails to teach what is claimed, the ’850 patent fails to satisfy its end of the patent bargain. “Patent protection is granted in return for an enabling
15 disclosure of an invention, not for vague intimations of general ideas that may or may not be workable.” *Genentech*, 108 F.3d at 1366.

Therefore, Claims 12-16 are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 for lack of enablement. *See also* Helal Decl., Ex. 1003, at § VIII(A)(4).

20 **B. INVALIDITY OF THE CHALLENGED CLAIMS FOR
OBVIOUSNESS UNDER 35 U.S.C. § 103**

1. Ground 9: The Challenged Claims Are Obvious Over Brandt In View

Of Nethopper

Brandt teaches “an apparatus and method for providing access to software applications via the world-wide web” which was developed at IBM. Ex. 1005 at ¶

1. Brandt describes client/server systems that enable “handheld” computers and
5 “Personal Digital Assistants (PDAs)” to connect to applications over “wireless” networks. *Id.* at ¶¶ 14-15. The disclosed systems include a centralized “application gateway” which facilitates client access to and communication with the applications. *Id.* at ¶ 31. The gateway receives user input and communicates with the applications to process that input and/or respond accordingly. *Id.* at ¶¶ 54-
10 55. The gateway also receives data from the applications and uses it to the generate web pages that are provided to the clients. *Id.*

At a high level, Brandt describes the basic system architecture illustrated in Figure 3. Ex. 1005 at ¶¶ 20 *et seq.* and description of Fig. 3 in “BRIEF DESCRIPTION OF DRAWINGS.” That architecture includes a client device or
15 workstation, a web server, an application gateway, and a software application. The application gateway works with the web server to provide a web-based interface to the software application. *Id.* at ¶¶ 56-57. The software application may have one or more associated databases. *Id.* at ¶ 26.

Brandt also describes additional details of the system architecture shown in
20 Figure 4, in which the applications are associated with workflows developed using

IBM's FlowMark workflow management platform. *Id.* at ¶¶ 75 *et seq.* and description of Fig. 4 in "BRIEF DESCRIPTION OF DRAWINGS." FlowMark was "a popular process engineering tool" that allowed business activities to be modeled and then executed "by computer systems over communication networks."

5 *Id.* at ¶ 76; Exs. 1037 and 1038 (providing further background on FlowMark).

The architecture of Figure 4 illustrates how Brandt's approach can be applied in the context of IBM FlowMark-based applications.

Brandt also describes a FlowMark-based "car rental example" to further illustrate Brandt's approach in the context of the architecture shown in Figure 4.

10 Ex. 1005 at ¶¶ 89 *et seq.* The car rental example describes how customers and rental agents interact with the system to facilitate rental car reservations over the Internet.

Ground 9 described below shows that Brandt discloses every limitation of the Challenged Claims and NetHopper further discloses storage of hospitality applications and data on the wireless handheld computing device in a fashion that complements the IBM technology described in Brandt.

A POSITA would have been motivated to combine Brandt with NetHopper. Brandt discloses computer systems that enable handheld or portable computers such as PDAs with web browsers to access applications over the World Wide Web
20 (e.g., Ex. 1005 at FIGS. 2, 3 and 4 and associated text including, e.g., ¶¶ 2-14).

NetHopper describes a web browser for the Apple Newton PDA as an example of a handheld or portable computer which could be used to access the web-based applications and interfaces described in Brandt. Ex. 1006 at 1-4. A POSITA would also be motivated to combine Brandt with NetHopper because NetHopper's caching and offline form filling features would advantageously provide support for disconnected clients. NetHopper's features would allow a user to fill out a car rental reservation request even while the wireless network connection was experiencing problems, for example.

Details of Ground 9 are provided below. Dr. Helal provides additional analysis and support for this ground in his declaration, Ex. 1003, at § VIII(B)(1).

a. Claim 12 is obvious over Brandt in view of NetHopper

(i) “An information management and synchronous communications system for use with wireless handheld computing devices and the internet”

Brandt teaches an information management and synchronous communications system for use with wireless handheld computing devices and the internet. The systems described in Brandt support the use of handheld computers and PDAs and wireless networks. See Ex. 1005 at ¶¶ 14-15. Fig. 3 depicts a system in which a client interacts with a software application through a web server and an Internet/application gateway over the World Wide Web. The client may connect to the web server over the Internet. *Id.* at ¶ 15.

User input is transmitted to the software applications through the web server

and gateway. *Id.* at ¶ 31. Application data is retrieved by the application gateway and used to dynamically generate web pages that are provided to the clients for display. *Id.* at ¶¶ 54-55. The features disclosed in Brandt for accomplishing this functionality are discussed in more detail below.

5 NetHopper describes “an information management and synchronous communications system for use with wireless handheld computing devices and the internet” in the context of a web browser for the Apple Newton PDA which can be used to access applications over the Internet. Ex. 1006 at 1-4. Therefore, both Brandt and NetHopper provide motivations to combine their separate teachings for
10 the claimed “an information management and synchronous communications system for use with wireless handheld computing devices and the internet.”

See also Helal Decl., Ex. 1003, at § VIII(B)(1)(a)(i).

(ii) “a central database containing hospitality applications and data”

Brandt discloses that applications such as software application 342 in Fig. 3
15 have associated databases. *Id.* at ¶¶ 26, 28, 65. The database for the car rental application includes the application data “such as which cars are available, etc.” *Id.* at ¶ 78. The database also includes customer and account information. *Id.* at ¶ 101. The database is updated as the application is used, for example, to reflect that a particular car has been reserved. *Id.* at ¶ 102. The database further contains
20 process model data for the car rental application and maintains status information

as instances of the process are executed. *Id.* at ¶¶ 78, 99, 111. The database itself is also an application.

The car rental applications described in Brandt are hospitality applications. Car rental companies fall within the “Travel and Tourism” sector of the hospitality industry. Ex. 1035 at 11-14 and 403-404.

NetHopper allows an Apple Newton PDA “to make a connection from your Newton to your Internet Service Provider (ISP) so you can perform tasks like browsing the Web or retrieving email.” Ex. 1006 at 2. A POSITA would have appreciated that many web-based applications including email applications are database driven. Therefore, this aspect of the NetHopper provides a reason to combine with Brandt with respect to the claimed central database containing hospitality applications and data.

See also Helal Decl., Ex. 1003, at § VIII(B)(1)(a)(ii).

15 (iii) ***“at least one wireless handheld computing device on which hospitality applications and data are stored”***

Brandt teaches that client workstations may be any type of computer with a web browser, including handheld computers and PDAs. Ex. 1005 at ¶ 14. Clients download web pages which are then displayed by the web browser. *Id.* at ¶ 20. As discussed below, the web pages may include hospitality applications and data.

20 NetHopper, in combination with Brandt and in the same context of Brandt, further discloses storage of hospitality applications and data on a PDA. NetHopper

discloses that web pages may be cached on a handheld wireless device. Ex. 1006 at 14-15. When pages are cached, they are persistently stored on the device and accessed from local storage. *Id.* Further, NetHopper discloses that web pages with HTML forms can be cached and the forms may be completed while the user is disconnected from the network. *Id.* at 17-18. In this scenario, both the application web pages and the data entered by the user is stored on the handheld device. It would have been obvious based on Brandt and NetHopper to cache car rental application web pages on a wireless handheld computing device and to fill out forms on the device during periods of network disconnection.

10 *See also* Helal Decl., Ex. 1003, at § VIII(B)(1)(a)(iii).

(iv) ***“at least one web server on which hospitality applications and data are stored”***

Brandt teaches a web server. Ex. 1005. at ¶ 17; Figs. 2 - 4. The web server serves “static HTML pages” and “dynamically” generated web pages. *Id.* at ¶¶ 17,

15 20. The web pages and/or components thereof may be stored on the web server.

Id. In addition, the web servers may interface with “common gateway interface” (CGI) modules or other modules to enhance their functionality and to interface with other software applications. *Id.* at ¶¶ 19, 81. These modules can be located on the web server or on a separate computer system. *Id.* at ¶¶ 19, 86; Fig. 4.

20 The web server receives user input data and passes it to the application gateway. *Id.* at ¶ 31. The web server also receives web pages dynamically

generated by the application gateway and sends them to the client. *Id.* at ¶ 55; Fig.

7. The gateway uses HTML templates from a template library. *Id.* at ¶ 54. The template library could be stored anywhere, including on the web server, as long as it is accessible to the gateway. *Id.*; *id.* at ¶ 86; Fig. 4 (showing portion of gateway

5 332 on web server computer system 220).

In the FlowMark embodiment, the web server communicates with clients and with a CGI module 420 which is part of the gateway 332. *Id.* at ¶¶ 77-78; Fig.

4. In the car rental example, the web server serves application web pages such as the reservation request page (*id.* at ¶¶ 90-91; Fig. 11), the reservation confirmation

10 page (*id.* at ¶ 108; Fig. 14), and pages used by the rental agents to manage reservations (*id.* at ¶¶ 120-121; Figs. 20-22 and 25). These pages contain

application data. The web server also receives the data input by the users and passes it to the gateway via the gateway's CGI module. *Id.* at ¶¶ 31, 91, 94.

NetHopper also describes web servers: "The World Wide Web (WWW) consists of computers worldwide that store information in HTML (hypertext markup language) format." Ex. 1006 at 2. Therefore, this common or related teaching in both NetHopper and Brandt provides a reason or motivation to combine the two references.

See also Helal Decl., Ex. 1003, at § VIII(B)(1)(a)(iv).

20 (v) ***"at least one web page on which hospitality applications and data are stored"***

Brandt teaches static and dynamic web pages. Ex. 1005 at ¶¶ 17, 20. Web pages may include HTML forms for receiving user input. *Id.* at ¶ 21. Web pages can include Java applets and/or JavaScript. *Id.* at ¶¶ 16, 107. Dynamically generated web pages may include application data. *Id.* at ¶¶ 55, 57, 62.

5 The rental car example involves several web pages on which hospitality applications and data are stored. For example, the reservation request page includes an HTML form for the customer to specify the pick-up location and date and the type of car they prefer. *Id.* at ¶¶ 90-91; Fig. 11. The confirmation web page includes a confirmation number and a button for the user to confirm the
10 reservation. *Id.* at ¶¶ 107-108; Figs. 13 and 14. The web pages for the rental agents include details of pending reservation requests and allow the agents to interact with those requests. *Id.* at ¶¶ 112-121; Figs. 20-22, 24, and 25.

NetHopper also describes web pages: “You can access web pages in two ways: tapping a hypertext link or typing in the Uniform Resource Locator (URL)
15 of the page in NetHopper.” Ex. 1006 at 2. Therefore, this common or related teaching in both NetHopper and Brandt provides a reason or motivation to combine the two references.

See also Helal Decl., Ex. 1003, at § VIII(B)(1)(a)(v).

(vi) **“an application program interface”**

20 Brandt teaches that applications have application program interfaces (APIs):

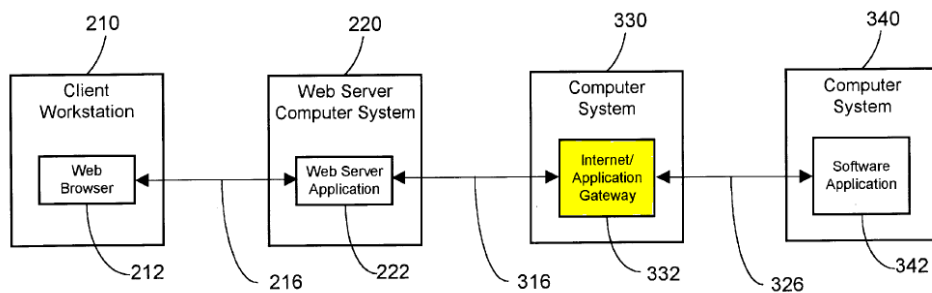
“Application Programming Interfaces (APIs) are used by program developers to provide access to certain features of a given software application. Each application program will have APIs that allow third parties to access certain features, to interface the application program with other programs, and to provide access for end-users.” Ex. 1005 at ¶ 22.

In the FlowMark embodiment, Brandt describes FlowMark APIs 436 which may be used by other applications to interface with FlowMark. *Id.* at ¶ 78. Further, as discussed below, Brandt also discloses that HTML templates may include substitution variables which may be used as APIs.

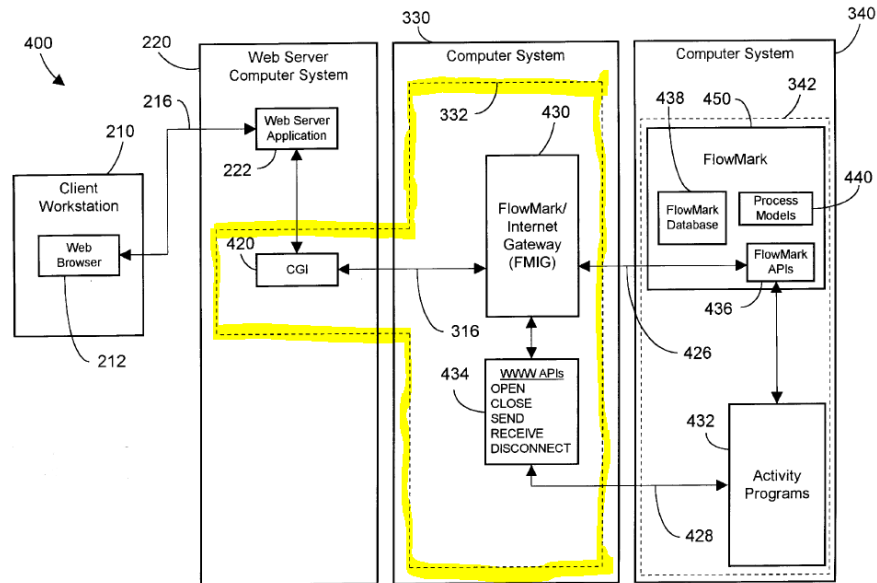
See also Helal Decl., Ex. 1003, at § VIII(B)(1)(a)(vi).

(vii) “a communications control module”

Brandt discloses a communications control module. Brandt discloses an “application gateway” module which enables users to access applications through a web browser over a network. Ex. 1005 at ¶¶ 31, 46, 56. Figure 3 shows Internet/Application Gateway module 332 between the web server and the software application:



In the FlowMark-based embodiment of Figure 4, the gateway 332 includes multiple components a CGI module 420 and the FlowMark/Internet Gateway (FMIG) module 430:



5 *Id.* at ¶¶ 77-78 (describing Fig. 4) and ¶¶ 82-83 (describing role of CGI 420 and FMIG 430). The same gateway can connect several clients to several different applications simultaneously. *Id.* at ¶ 87 and Fig. 10.

The gateway enables communication over a network between the clients and the software applications. *Id.* at ¶ 64 (“At this point in the process, communication
10 has already been established between client workstation 210 and software application 342 through gateway 332.”); ¶ 68 (gateway includes APIs to “facilitate the interaction” between browser and software application); *id.* at ¶ 56. Based on user input and actions received from a client device, the “Gateway 332 generates the appropriate commands that the software application 342 can understand and

communicates the commands to software application 342.” *Id.* at ¶¶ 54-55. The gateway also communicates data from the applications to the clients. For example, the gateway uses application-provided data to generate HTML-formatted output for the clients. *Id.* at ¶¶ 55, 62, 73.

5 The ’850 patent states that the communications control module “monitors and routes all communications to the appropriate devices.” Ex. 1001 at 9:21-22. The gateway in Brandt likewise monitors and routes communications to the appropriate client devices and applications. The gateway uses “conversation identifiers” in order to ensure that each communication gets to the correct client or
10 application. Ex. 1005 at ¶¶ 64, 83. In the context of Fig. 3, “Gateway 332 thus maintains the information necessary to control the flow of data between the various users and software application 342.” *Id.* at ¶ 64; *id.* at ¶¶ 73-74 (conversation identifiers used in routing SEND and RECEIVE requests); ¶¶ 63 and 95 (variable names used for routing input and requests to applications).

15 *See also* Helal Decl., Ex. 1003, at § VIII(B)(1)(a)(vii).

(viii) “wherein applications and data are synchronized between the central data base, at least one wireless handheld computing device, at least one Web server, and at least one Web page”

Brandt discloses systems wherein applications and associated application
20 data are synchronized are synchronized between a database, handheld device, web server, and web page. As discussed above, using PDAs or other client devices,

users access database-driven applications through a web-based interface.

Brandt teaches several mechanisms for synchronizing dynamic application data throughout the system. First, Brandt discloses HTML templates which may include input variables and/or substitution variables. Ex. 1005 at ¶ 59. Input variables are used to pass data from the client web browser to the software application. *Id.* at ¶¶ 59-60. As noted above, the HTML templates could include HTML forms with input fields to receive user input. Information entered by the user on the web page is received by the gateway, passed to the application, and may be stored in the application database. *Id.* at ¶ 31, 101, 110.

Going the other direction, substitution variables “are used to provide to provide customized output from software application 342.” *Id.* at ¶ 59. The gateway identifies any substitution variables in the HTML template and requests data from the appropriate software applications. *Id.* at ¶¶ 55, 57, 62. The gateway includes the data provided by the software applications when it dynamically generates the web page for the client. *Id.* at ¶¶ 55, 57.

Second, Brandt discloses a set of APIs which are used to facilitate data exchange between the applications and the clients. *Id.* at ¶ 68. For example, a SEND API is invoked by an application to send application data through the gateway to the client. *Id.* at ¶¶ 23, 73. A RECEIVE API is used to receive data from the client through the application gateway. *Id.* at ¶¶ 24, 74. Brandt also

discloses OPEN and CLOSE APIs which are used to establish a “conversation” between an application and a particular client. *Id.* at ¶¶ 69, 72, 104.

The car rental example uses the above mechanisms to synchronize dynamic application data throughout the system. The central database includes application data “such as which cars are available, etc.” *Id.* at ¶¶ 78; 102. Customers submit reservation requests using a web-based form. *Id.* at ¶¶ 90-91, Fig. 11. The reservation is received by the application gateway which communicates with the car rental application. *Id.* at ¶¶ 92, 94, 98. Reservation requests are reflected in the database. *Id.* at ¶¶ 78, 99, 110. Rental agents view pending reservation requests and may select from available cars to fill the requests. *Id.* at ¶¶ 112-121; Figs. 20-22, 24-25. Customers are provided with confirmation details, including a reservation number. *Id.* at ¶¶ 103,107; Figs. 13-14.

Brandt’s approach ensures data consistency. Application data resides primarily on the server side, *e.g.*, in a database. *Id.* at ¶¶ 78, 101, 102; Fig. 4. Because application data is retrieved from the database on an as-needed basis, consistency is maintained throughout the system and the current data is available for display to all users on all client devices. *See* Ex. 1042 (Patent Owner claim construction brief) at 28 (“[S]ynchronized’ in the claims means that the same information provided to users via the display of user interfaces is presented consistently to different client devices in a client/server system.”).

Brandt's approach of using a server-side central database to store application data was commonplace in client/server applications long before Patent Owner filed for the '850 patent in September 1999. *See, e.g.*, Ex. 1020 at 6-11. Patent Owner asserts that its invention is based on the same approach: "The patented invention uniquely solved these challenges with a technological software system solution in which a central database maintains 'database equilibrium' and contains a 'single truth' of hospitality data" Ex. 1047 at 15.

In addition, NetHopper discloses synchronization between a web server and PDA. For example, NetHopper discloses refreshing and caching of web pages, both of which involve retrieving the current version of a web page from the web server. Ex. 1006 at 10, 14-16. NetHopper also discloses form submission which involves transmitting data that the user has entered on the PDA to the web server. *Id.* at 17. Therefore, these common or related teachings in both NetHopper and Brandt provide a reason or motivation to combine the two references.

See also Helal Decl., Ex. 1003, at § VIII(B)(1)(a)(viii).

(ix) "wherein the application program interface enables integration of outside applications with the hospitality applications"

As discussed above, Brandt discloses APIs. Brandt teaches that APIs enable integration of outside applications: "Each application program will have APIs that allow third parties to access certain features, to interface the application program with other programs, and to provide access for end users." Ex. 1005 at

¶ 22. Because Brandt discloses both (a) hospitality applications (*e.g.*, the car rental applications), and (b) that applications have APIs for integrating outside applications, Brandt discloses this claim limitation.

Additionally, in the FlowMark embodiment, the FlowMark APIs 436 enable integration with outside applications. FlowMark APIs 436 “are standard APIs that are supplied with FlowMark 450.” *Id.* at ¶ 78. These APIs support the flow of data and status information in both directions between the caller of the API and FlowMark. *Id.* at ¶ 82. FlowMark APIs can be used to create new instances of a modeled business process (*e.g.*, a new instance of the reservation process) and to start the execution of the new instance. *Id.* Although the FlowMark APIs are used by the FlowMark Internet Gateway 430, the APIs are standard APIs capable of being used by other applications as well. *Id.* at ¶ 97. The FlowMark APIs thus enable integration between the car rental application and other applications.

Finally, the substitution variables discussed above can also serve as APIs that enable integration with outside applications. Substitution variables cause the gateway to connect to applications to retrieve data. *Id.* at ¶¶ 55, 62. A single HTML template can include multiple substitution variables in order to interface with multiple applications at the same time. *Id.* at ¶ 95 (“[B]y using the appropriate HTML variables a web client is able to work with many different applications through a single web page.”); *id.* at ¶¶ 57, 63. Thus, using the

appropriate variables, the HTML templates used in the car rental application could be configured to send data to or retrieve data from outside applications.

See also Helal Decl., Ex. 1003, at § VIII(B)(1)(a)(ix).

5 (x) ***“wherein the communications control module is an interface between the hospitality applications and any other communications protocol”***

As discussed above, the gateway module disclosed in Brandt is a communications control module. Brandt further discloses that the gateway serves an interface between the applications (*e.g.*, the car rental applications) and a communications protocol.

10 Brandt discloses communication protocols on the client side of the gateway, *e.g.*, on the left side of gateway 332 in Figures 3 and 4. For example, Brandt notes that “[a]lthough the current preferred embodiment of the invention uses the ‘CGI Post’ (stdin) format for data transmission from web browser 212 to CGI 420, any other data transmission formats that may be generated by web browser 212 are
15 contemplated and are within the scope of this invention.” Ex. 1005 at ¶ 81; *id.* at ¶ 91, 94. Recall that CGI 420 is part of the gateway as shown in Fig. 4. *See id.* at ¶ 78. Thus, Brandt teaches that clients use the HTTP protocol (in particular HTTP POST requests) to communicate with the gateway. The ’850 patent references HTTP as a communications protocol. Ex. 1001 at 12:4-9.

20 The ’850 patent states that the communications control module shields the hospitality applications from changes to the communication protocols used in the

system. *Id.* at 11:27-32 (noting the communications control module “can be easily updated to work with a new communication protocol without having to modify the core hospitality applications.”). The gateway module in Brandt accomplishes the same thing. The gateway uses communication protocols (*e.g.*, HTTP) to
5 communicate with the clients, but uses a “native command interface” to communicate with the software application. Ex. 1005 at ¶ 97; *id.* at ¶ 55 (gateway “generates commands that the software application 342 can understand”). Because the gateway uses a command interface to communicate with the software applications, that interface can “remain unchanged even if the web interface is
10 changed.” *Id.* at ¶¶ 82, 85, 97.

In addition, lower level network communication protocols would be used on the client side of the gateway. Figure 3 depicts gateway 332 on a separate computer system 330 from the web server computer system 220. Brandt states that the connections in the figures may utilize any network technology. *Id.* at ¶ 86.
15 Network communications between the web server computer and the gateway computer would use communication protocols. In one preferred embodiment, the gateway and the software applications reside on the same computer system. *Id.* In that embodiment, there would be network communication protocols (*e.g.*, TCP/IP) used between the web server and the gateway, but not between the gateway and the
20 software application because they are on the same machine. The gateway would

therefore be an interface between the applications and the network communication protocols used to communicate with the web server.

NetHopper discloses the HTTP communication protocol (Ex. 1006 at 7, 8) which is also disclosed in Brandt. Therefore, this aspect of NetHopper provides a
5 reason to combine with Brandt with respect to the claimed central database containing hospitality applications and data.

See also Helal Decl., Ex. 1003, at § VIII(B)(1)(a)(x).

Therefore, Brandt and Nethopper collectively disclose all limitations of Claim 12 and render the claimed subject matter as a whole obvious and invalid.

10 **b. Claim 13 is obvious over Brandt in view of NetHopper**

Brandt discloses that “the communications control module provides a single point of entry for all hospitality applications and [that] the single point of entry allows the synchronization of at least one wireless handheld computing device and at least one Web page with the central database so that at least one handheld device,
15 at least one Web page and central database are consistent.”

First, the application gateway module in the IBM system disclosed by Brandt is a single point of entry. The same gateway can be used to provide an interface to “a plurality of software applications.” *Id.* at ¶ 96 and at ¶ 31.

Moreover, the same gateway can serve to connect multiple clients to multiple
20 applications simultaneously. *Id.* at ¶ 87; Fig. 10.

Second, the application gateway in Brandt allows synchronization between the client, the web pages, and the database so that data is consistent throughout the system. As discussed above in § V(B)(1)(a)(viii), the application gateway is central to the synchronization disclosed in Brandt at least because the application gateway (i) communicates with applications based on input received from clients; (ii) dynamically generates web pages containing application data, and (iii) provides the WWW APIs that allow software applications to communicate with the clients.

Therefore, Claim 13 is obvious. Helal Decl., Ex. 1003, at § VIII(B)(1)(b).

c. Claim 14 is obvious over Brandt in view of NetHopper

Brandt discloses that “information entered on at least one Web page and transmitted over the internet is automatically communicated to the central database and at least one wireless handheld computing device” as recited in Claim 14. As discussed above, Brandt discloses that a customer can submit a reservation request from a web page. The request is reflected in the database. The request would also appear on the rental agent’s list of pending reservations. Since any client can be a handheld computer or PDA (*see* Ex. 1005 at ¶ 14), the reservation request information may be communicated to a rental agent’s wireless handheld computing device. Helal Decl., Ex. 1003, at § VIII(B)(1)(c). Therefore, Claim 14 is obvious.

d. Claim 15 is obvious over Brandt in view of NetHopper

Brandt discloses that “information entered on at least one wireless handheld

computing device is automatically communicated to the central database and at least one Web page.” As discussed above, Brandt discloses that a customer can submit a reservation request. The request is reflected in the application database. Since any client can be a handheld computer or PDA (*see* Ex. 1005 at ¶ 14), the reservation request information may be entered on a customer’s wireless handheld computing device. The request would be reflected in the application database. The request would also appear on the rental agent’s list of pending reservations which is displayed on a web page. Helal Decl., Ex. 1003, at § VIII(B)(1)(d). Therefore, Claim 15 is obvious.

10 **e. Claim 16 is obvious over Brandt in view of NetHopper**

Brandt discloses that “the applications and data are synchronized by digital data transmission between the central database, at least one wireless handheld computing device, at least one Web server and at least one Web page.” *See supra* § V(B)(1)(a)(viii). All communications between the various computer systems and software applications disclosed in Brandt involves “digital data transmission.” Helal Decl., Ex. 1003, at § VIII(B)(1)(e). Therefore, Claim 16 is obvious.

15 **2. Ground 10: The Challenged Claims Are Obvious Over Brandt In View Of Demers And Alonso**

The combined teachings of Brandt, Demers and Alonso also disclose all features of Claims 12-16 and render them invalid. Dr. Helal provides additional analysis and support for this ground in his declaration, Ex. 1003, at § VIII(B)(2).

Demers (Ex. 1009) describes the Bayou System which is “a platform of replicated, highly-available, variable-consistency, mobile databases on which to build collaborative applications.” Ex. 1009 at 2. Like Brandt, Demers discloses PDAs which wirelessly communicate with servers. *Id.* at 2. Demers teaches that 5 mobile applications can read from and write to locally stored “replicated databases.” *Id.* at 3. This allows mobile applications to function properly during periods of network disconnection. *Id.* The replicated databases are synchronized with server-side databases including a “primary” database. *Id.* at 4-5.

Alonso (Ex. 1012) describes an approach for adding disconnected client 10 support for workflow management systems, including IBM’s FlowMark system—the same FlowMark system disclosed in Brandt. Alonso explains that disconnected client support would enable increased mobile computing capabilities when devices are not always connected to the network. Ex. 1012 at Abstract, 27-28. Alonso teaches that the mobile computer would download the necessary data 15 to allow the user to work offline and then synchronize updates with the IBM FlowMark system upon re-connection to the network. *Id.* at 34-38.

A POSITA would be motivated to combine Brandt with Demers and Alonso for several reasons. Brandt and Alonso both address how to increase accessibility to the same FlowMark workflow management system. Alonso teaches that 20 disconnected client support is advantageous and that it requires storing some data

locally and synchronizing it with the FlowMark system. Demers provides a specific approach to data replication and synchronization for use with mobile applications on mobile computing devices. The approach described in Demers could thus be used to implement the disconnected client features discussed in

5 Alonso. Further, Xerox PARC's work on the Bayou system was well known in the art for its contributions to mobile database replication. As such, a POSITA would have naturally looked into Bayou for useful teachings in this area.

a. Claim 12 is obvious over Brandt in view of Demers and Alonso

10 (i) *“An information management and synchronous communications system for use with wireless handheld computing devices and the internet”*

Brand discloses this element. *See supra* § V(B)(1)(a)(i).

(ii) *“a central database containing hospitality applications and data”*

Brand discloses this element. *See supra* § V(B)(1)(a)(ii). Demers discloses network databases including a “primary” database. Ex. 1009 at 2, 5. Alonso also
15 discloses a central database. Ex. 1012 at 32 and Fig. 2. These aspects of Demers and Alonso provide a reason to combine with Brandt with respect to the claimed central database containing hospitality applications and data.

(iii) *“at least one wireless handheld computing device on which hospitality applications and data are stored”*

20 Brandt discloses this element. *See supra* § V(B)(1)(a)(iii). In addition, Demers and Alonso, in combination with Brandt, further disclose storage of hospitality applications and data on a PDA. Demers discloses PDAs and mobile

applications that can operate in disconnected mode using local data that is synchronized periodically with a network database. Alonso suggests adding disconnected client support to extend capabilities of workflow systems that are discussed in Brandt. As such, PDA-based rental car applications that work with locally stored data and synchronize with the network-based application database when network connectivity allows would have been obvious in view of Brandt, Demers, and Alonso.

(iv) ***“at least one web server on which hospitality applications and data are stored”***

10 Brandt discloses this element. *See supra* § V(B)(1)(a)(iv).

(v) ***“at least one web page on which hospitality applications and data are stored”***

Brandt discloses this element. *See supra* § V(B)(1)(a)(v).

(vi) ***“an application program interface”***

15 Brandt discloses this element. *See supra* § V(B)(1)(a)(vi). Alonso also discloses APIs. Ex. 1012 at 30 and Fig. 3. This aspect of Alonso provides a reason to combine with Brandt with respect to the claimed application program interface.

(vii) ***“a communications control module”***

20 Brandt discloses this element. *See supra* § V(B)(1)(a)(vii).

(viii) ***“wherein applications and data are synchronized between the central data base, at least one wireless handheld computing device, at least one Web server, and at least one Web page”***

Brandt discloses this element. *See supra* § V(B)(1)(a)(viii). In addition, Demers and Alonso disclose synchronization with handheld computers. Ex. 1009 at 3-4 (describing “reconciliation” process); Ex. 1012 at 34-38 (describing “synchronization prior to disconnection” and communication of updates upon reconnection). These aspects of Demers and Alonso provide a reason to combine with Brandt with respect to the “synchronized” limitation.

(ix) *“wherein the application program interface enables integration of outside applications with the hospitality applications”*

Brandt discloses this element. *See supra* § V(B)(1)(a)(ix).

10 (x) *“wherein the communications control module is an interface between the hospitality applications and any other communications protocol”*

Brandt discloses this element. *See supra* § V(B)(1)(a)(x).

b. **Claim 13 is obvious over Brandt in view of Demers and Alonso**

Brandt discloses the additional element of Claim 13. *See supra* § V(B)(1)(b).

15 c. **Claim 14 is obvious over Brandt in view of Demers and Alonso**

Brandt discloses the additional element of Claim 14. *See supra* § V(B)(1)(c).

d. **Claim 15 is obvious over Brandt in view of Demers and Alonso**

Brandt discloses the additional element of Claim 15. *See supra* § V(B)(1)(d).

e. **Claim 16 is obvious over Brandt in view of Demers and Alonso**

20 Brandt discloses the additional element of Claim 16. *See supra* § V(B)(1)(e).

C. GROUND 11: INVALIDITY OF THE CHALLENGED CLAIMS UNDER § 101

The Supreme Court has outlined a two-part framework for identifying

claims that fall outside §101. The first step is to determine whether the claims are directed to a patent-ineligible concept such as an abstract idea. *Alice*, 134 S. Ct. at 2355 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1293 (2012)). If so, the second step is to determine whether the claims include an additional element or combination of elements “sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.” *Alice*, 134 S. Ct. at 2355. “[W]holly generic computer implementation is not generally the sort of ‘additional featur[e]’ that provides any practical assurance that the process is more than a drafting effort designed to monopolize the [abstract idea] itself.”) *Id.* at 2358.

The *Alice* framework confirms that the Challenged Claims are patent-ineligible because (1) they are directed to abstract hospitality activities such as ordering food and making reservations, and (2) they merely require generic computer implementation. Dr. Helal provides additional analysis and support for this ground in his declaration, Ex. 1003, at § VIII(C).

1. The Challenged Claims Are Directed to Abstract Ideas

The Challenged Claims are “do it on a computer” claims. They are directed to fundamental and abstract activities in the hospitality industry such as ordering food and making reservations. Although styled as system claims, they merely recite a generic system for computerizing hospitality activities. Like the claims in

Alice, “the system claims recite a handful of generic computer components configured to implement the [abstract] idea.” 134 S. Ct. at 2360.

Like the claims deemed patent-ineligible in *Alice* and *Bilski*, the Challenged Claims here relate to “fundamental practice[s] long prevalent in our system of commerce.” *Alice*, 134 S. Ct. at 2356 (quoting *Bilski*, 561 U.S. at 611).

Restaurants, taverns, and inns date back thousands of years and have been common in the U.S. for centuries. Ex. 1035 at 33-74 (discussing origins of hospitality industry) and 79-124 (discussing evolution of hospitality industry in the U.S. during the 20th century). Activities such as ordering food have always been fundamental in the hospitality industry. *Id.* at 46, 53, 93, 96, 100-101. Moreover, these hospitality activities are much simpler and more commonplace than the risk hedging practice at issue in *Bilski* or the intermediated settlement practice at issue in *Alice*. See *Alice*, 134 S. Ct. at 2356-57; *Bilski*, 561 U.S. at 599.

The '850 patent specification confirms the goal of the Challenged Claims is to computerize the “everyday” routine activities of the hospitality industry. For example, the specification states that “user-friendly information management and communication capability . . . has not heretofore been available for use in everyday life such as for restaurant ordering, reservations, and wait-list management.” Ex. 1001 at 1:33-37; *id.* at 2:33-48 (“[C]omputerization of [paper-based ordering, waitlist, and reservations management] functions has been largely limited to fixed

computer solutions, i.e., desktop or mainframe” and has not yet extended to “wireless handheld devices.”).

Claim 12 was drafted to be generic as to which abstract hospitality activities are computerized by the claimed system—it recites “hospitality applications and data” generally. The specification states that the claimed invention can be used for ordering (*id.* at 14:13-17), reservations (*id.* at 11:36-42), and all other hospitality applications (*id.* at 4:5-8). That Claim 12 was drafted to cover *multiple* abstract hospitality activities cannot make it patent-eligible. *See Alice*, 134 S. Ct. at 2351 (“This Court has long warned against interpreting § 101 in ways that make patent eligibility depend simply on the draftsman’s art.”).

The claims of the ’325 patent, a continuation of the ’850 patent, provide further confirmation that the Challenged Claims are directed to abstract activities such as ordering. The ’325 patent includes claims that recite the *identical system* recited by Claim 12 of the ’850 patent and then append the limitations “wherein the synchronized data relates to orders” (’325 patent, Claim 11), “wherein the synchronized data relates to waitlists” (Claim 12), and “wherein the synchronized data relates to reservations” (Claim 13). Ex. 1002 at 17:4-18:32.

In view of the above, the Challenged Claims are directed to patent-ineligible abstract ideas of such as ordering and reservations, which are long-established practices in the hospitality industry.

2. The Challenged Claims Do Not Include An “Inventive Concept” That Is “Significantly More” Than the Abstract Idea

Under step two of the *Alice* framework, the Challenged Claims do not include an “inventive concept” that “ensures the claims are more than a drafting effort to monopolize the abstract idea.” *Alice*, 134 S. Ct. at 2357. Notably, Patent Owner routinely states that its “pioneering web/wireless data synchronization inventions have been patented ... and are *now essential to the modern wireless/web hospitality enterprise.*” Ex. 1040 at 1; Ex. 1041 at 1. These statements raise concerns that the claims nothing other than “a drafting effort to monopolize” the use of wireless and web technologies in the hospitality industry.

Rather than reciting an “inventive concept,” the Challenged Claims “merely require generic computer implementation” and thus “fail to transform the abstract idea into a patent-eligible invention.” *Alice*, 134 S. Ct. at 2357. The Challenged Claims recite generic computer technology such as a “central data base,” a “wireless handheld computing device,” a “Web server,” a “Web page,” and an “application program interface.” These system components were well known and widely used long before the ’850 patent was filed in late 1999. As shown above, the prior art cited in this petition discloses all the system components and combinations as claimed. *See supra* § V(B); *CRS Advanced Techs., Inc. v. Frontline Techs, Inc.*, CBM2012-00005, Paper 17 at 9 (holding that “communication link,” “website,” “database,” and “server” claim limitations were

generic and not novel or unobvious in late 1999).

The specification acknowledges that the client and server computers were conventional. “The preferred embodiment of the present invention uses *typical hardware elements* in the form of a computer workstation, operating system and application software elements which configure the hardware elements for operation in accordance with the present invention.” Ex. 1001 at 5:33-37. The preferred embodiment also includes “a *typical file server platform*” with a Windows-based operating system, “e.g., Windows® 95, 98, NT, or CE, networking software (including Web server software) and database software.” *Id.* at 5:48-54.

10 The wireless handheld computers were also conventional. The specification notes that “handheld devices” were “in common use.” Ex. 1001. at 1:29-33. Indeed, “the use of wireless handheld devices in the restaurant and hospitality industry [was already] becoming increasingly pervasive.” *Id.* at 3:40-43. The specification references existing “PDA” devices such as “the Palm®” (*id.* at 1:62-15 65), and suggests use of Microsoft’s Windows CE operating system for the wireless handheld devices in the preferred embodiment (*Id.* at 10:63-11:3).

The ’850 patent admits that e-commerce web sites were in use: “Web server application software exists that enables a user to shop for and order merchandise. Such systems are sometimes referred to as electronic merchandising systems or 20 virtual storefronts. . . . The user may select multiple items in this manner and then

enter a credit card number to pay for the purchases. The retailer processes the transaction and ships the order to the customer.” *Id.* at 12:43-61. That no novel approach to using web technologies is discussed in the specification indicates that the “web server” and “web page” recited in Claim 12 are conventional as well.

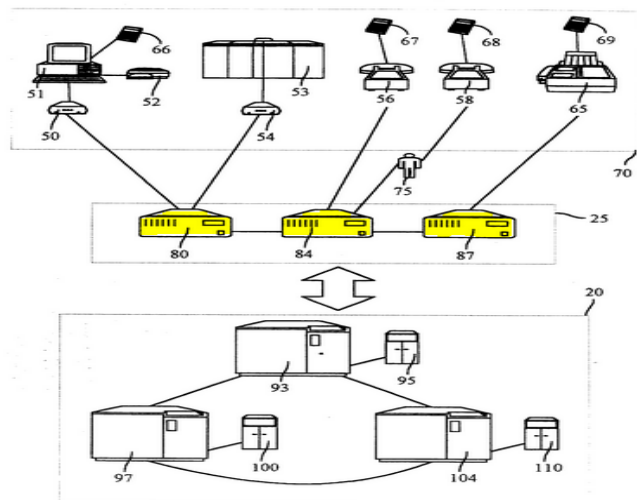
5 Application programming interfaces (APIs) were also commonplace long before the ’850 application was filed. As discussed above in Section V(B), the Brandt prior art teaches that applications typically include APIs that enable certain features and functions to be accessed by other software. Ex. 1005 at ¶ 22; Ex. 1036 at 433. The lack of any discussion in the ’850 patent specification as to how
10 the recited APIs are implemented indicates that the claimed APIs are conventional.

 The “communications control module” also does not make the Challenged Claims patent-eligible because it is a generic program. The communications control module is a program that facilitates communications between the client and server devices in the system. Exhibit 1001 at 9:21-25. It is only described at a
15 high level with vague, functional language (*e.g.*, “single point of entry”). *Id.* at 11:24-27. That the specification provides no algorithm or other meaningful explanation of how it works confirms that it is a generic software program. Indeed, Patent Owner previously proposed to construe “communications control module” generically as “a software program that is enabled to allow communication of
20 hospitality information between interconnected devices or different applications

via one or more application program interfaces and via one or more communications protocols.” Ex. 1042 at 26. Use of a centralized module to facilitate communications between clients and servers was well known in the art. See Ex. 1036 at 99-122 (describing “Brokers”) and 323-337 (describing “Dispatchers”).

In *Alice*, the Supreme Court considered and rejected the patent owner’s argument that a similar system component—a “communications controller”—made the claims there patent-eligible. 134 S. Ct. at 2360. Like the “communications control module” of the ’850 patent, the “communications controllers” in the Alice Corp. patents were centralized components that facilitated communications between the client devices used by the “stakeholders” and the “processing units” (*i.e.*, servers): “A number of communications controllers 80, 84, 87 . . . are coupled with the processing unit 20. These controllers effect communications between the processing units 93, 97, 104 and the various external

hardware devices used by the stakeholders to communicate data or instructions to or from the processing units.” Ex. 1039 at 7:57-63. The figure here shows the communications controllers numbered 80, 84, and 87.



Id. at Fig. 2. The Supreme Court rejected the argument that the communications controllers were “specific hardware,” and instead found the communication controllers to be “purely functional and generic.” *Alice*, 134 S. Ct. at 2360. The “communications control module” of the ’850 patent is similarly generic computer technology for performing generic networking functions and does not make the Challenged Claims patent-eligible. *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1355 (Fed. Cir. 2014) (“That a computer receives and sends the information over a network—with no further specification—is not even arguably inventive.”).

The Challenged Claims require that the hospitality applications and data are “synchronized,” but the specification teaches no novel technology for achieving synchronization. The specification admits that the Windows CE OS used on the handheld devices includes “built-in synchronization” support: “Windows CE® provides the benefits of a familiar Windows 95/98/NT® look and feel, ***built-in synchronization between handheld devices, internet and desktop infrastructure,*** compatibility with Microsoft Exchange®, Microsoft Office 9® and TCP/IP quick access to information with instant-on feature.” Ex. 1001 at 10:65 – 11:3.

The specification of the ’850 patent confirms that nothing more than generic software is required to practice the invention:

The software applications for performing the functions falling within the described invention can be written in any commonly used computer language. ***The discrete***

programming steps are commonly known and thus programming details are not necessary to a full description of the invention.

5 *Id.* at 11:43-48. Clearly the applicants felt no obligation to explain how the claimed software worked—even at a high level, *e.g.*, using flowcharts—because they believed the software required nothing more than “commonly known” programming steps.

10 At most, the Challenged Claims limit the use of the abstract idea to a technological environment that includes certain hardware and software components such as a database, a handheld computer, and a web server. However, “limiting the use of an abstract idea ‘to a particular technological environment’” is insufficient “to transform a patent-ineligible abstract idea into a patent-eligible invention.” *Alice*, 134 S. Ct. at 2358; *buySAFE*, 765 F.3d at 1355.

15 Like independent Claim 12, dependent Claims 13-16 fail to include any elements that transform them into patent-eligible inventions. Claims 13-16 recite no additional components beyond the generic hardware and software recited in Claim 12. Ex. 1001 at 16:23-47. They merely use some additional language to describe the synchronization recited in Claim 12. Claim 13 recites that the communications control module provides a “single point of entry for all hospitality
20 applications” which is consistent with the only discussions of the communications control module in the specification. *Id.* at 4:5-8, 11:24-27. Claims 14 and 15

merely state that information can be transmitted from a web page to a database and wireless device and vice versa. Finally, Claim 16 merely states that the synchronization is by “digital data transmission.”

3. The Challenged Claims Fail the “Machine-or-Transformation” Test

5 Although the machine-or-transformation test is not dispositive in a § 101 analysis, it “can provide a ‘useful clue’ in the second step of the Alice framework.” *Ultramercial Inc. v. Hulu LLC*, 772 F.3d 709, 716 (Fed. Cir. 2014). A claimed process may be patent-eligible under §101 if: “(1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing.”

10 *Id.* The Challenged Claims fail both prongs of the machine-or-transformation test.

First, like the claims deemed patent-ineligible in *Ultramercial*, the Challenged Claims are “not tied to any particular novel machine or apparatus,” only to general purpose computers running generic software. *Id.* at 716-717. The claims therefore fail the “machine” prong. “Any transformation from the use of computers or the transfer of content between computers is merely what computers do and does not change the analysis.” *Id.*

Second, the Challenged Claims do not transform a particular article into a different state or thing. The orders, wait lists, and reservations that might be created or modified by the claimed system are merely “abstractions[,] they are not physical objects or substances, and they are not representative of physical objects

20

or substances.” *Id.* at 717. The orders, wait lists, and reservations are also not transformed into a different state or thing. Therefore, the Challenged Claims also fail the “transformation” prong as well.

In view of the above, the Challenged Claims are directed to patent-ineligible subject matter under § 101 and should be canceled.

VI. THE GROUNDS OF INVALIDITY ARE NOT REDUNDANT

The eleven grounds of invalidity raised herein are not redundant over one another and Petitioner requests that trial be instituted on all Grounds. Prior art Ground 10 (Brandt in view of Demers and Alonso) is not redundant over prior art Ground 9 (Brandt in view of NetHopper) because Ground 10 discloses a configuration in which the wireless handheld computing device includes a non-browser-based hospitality application.

In addition, the grounds raised herein are not redundant in view of those raised in the CBM2014-00015 or CBM2015-00080 proceeding. None of Grounds 1-8 based on § 112 were raised in CBM2014-00015 or CBM2015-00080. Prior Art Grounds 9 and 10 herein are based on prior art that does not overlap with the prior art cited in CBM2015-00080. The Brandt/IBM prior art is unique because it provides clear and comprehensive disclosure of a system that uses a communications control module (*i.e.*, the application gateway) to synchronize hospitality applications (*i.e.*, the car rental application) to wireless handheld

computing devices and other computers. All of the prior art used in Grounds 9 and 10 is prior art under § 102(b). Although a patent-eligibility challenge to Claims 12-16 was raised in CBM2015-00080, the Board denied institution on that ground prior to the Supreme Court's *Alice* decision. Under the *Alice* framework, the 5 Challenged Claims are not patent-eligible. *See supra* § V(C).

VII. CONCLUSION

This Petition has demonstrated that it is more likely than not that that Petitioner will prevail in its challenge of patentability for Claims 12-16 of the '850 patent under 35 U.S.C. §§ 112, 103(a), and 101. It is respectfully requested that a 10 trial for covered business method patent review of the '850 patent be instituted.

In addition, this Petition has shown that, by a preponderance of the evidence as presented, Claims 12-16 are invalid under the above grounds and thus must be canceled. Cancellation of claims 12-16 will prevent Patent Owner from improperly claiming technologies that were already known in the prior art before 15 its patent filing, and from asserting invalid patent claims against Petitioner and numerous others.

Dated: March 2, 2015

Respectfully submitted,

/Bing Ai/

Lead Counsel

Bing Ai, Reg. No. 43,312

Back-up Counsel

Matthew Bernstein, *Pro Hac Vice*

Patrick N. McKeever, Reg. No. 72,316

Yun L. Lu, Reg. No. 72,766

Attorneys for

STARBUCKS CORPORATION

PERKINS COIE LLP
11988 El Camino Real, Suite 350
San Diego, CA 92130
(858) 720-5700

Back-up Counsel
Matthew Bernstein, *Pro Hac Vice*
Patrick N. McKeever, Reg. No. 72,316
Yun L. Lu, Reg. No. 72,766

Attorneys for
STARBUCKS CORPORATION