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INTERNATIONAL CO., MOBO SYSTEMS, INC., PIZZA HUT OF
AMERICA, INC., PIZZA HUT, INC., and USABLENET, INC.,**

Petitioners

v.

AMERANTH, INC.,

Patent Owner

CASE No.: Unassigned
U.S. Patent No. 6,384,850

CASE No.: Unassigned
U.S. Patent No. 6,871,325

CASE No.: Unassigned
U.S. Patent No. 8,146,077

DECLARATION OF DON TURNBULL, PH.D.
IN SUPPORT OF PETITIONS FOR
COVERED BUSINESS METHOD REVIEWS OF AMERANTH PATENTS

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I, Don Turnbull, do hereby declare:

1. I am making this declaration at the request of Petitioners StubHub, Inc., Travelocity.com, LP, Expedia, Inc., Hotwire, Inc., Hotels.com, LP, Orbitz, LLC, Fandango, Inc., Kayak Software Corp., Hotel Tonight, Inc., Ticketmaster LLC, Live Nation Entertainment, Inc., Wanderspot LLC (d/b/a Urbanspoon), Opentable, Inc., Papa John's USA, Inc., Pizza Hut of America, Inc., Pizza Hut, Inc., Mobo Systems, Inc., Agilysys, Inc., Domino's Pizza, Inc., Domino's Pizza, LLC, Hilton Resorts Corporation, Hilton Worldwide, Inc., Hilton International Co., and Usablenet, Inc. (collectively, "Petitioners") in the matters of Covered Business Method Review of U.S. Patent Nos. 6,384,850 (the "'850 patent"), 6,871,325 (the "'325 patent"), and 8,146,077 (the "'077 patent") (collectively, the "Ameranth Patents").
2. I am being compensated for my work in these matters at my usual hourly rate of \$550. My compensation in no way depends upon the outcome of these proceedings.
3. In the preparation of this declaration, I have studied the items in the Exhibit lists for the petitions for Covered Business Method Review of the Ameranth Patents, as well as the documents listed below:
 - a. U.S. Patent No. 6,384,850 to McNally, et al.
 - b. U.S. Patent No. 6,871,325 to McNally, et al.

- c. U.S. Patent No. 8,146,077 to McNally, et al.
- d. U.S. Patent No. 6,982,733 to McNally, et al.
- e. U.S. Patent Application Number 09/400,413 (the “413 application”) (’850 Application)
- f. U.S. Patent Application Number 10/015,729 (the “729 application”) (’325 Application)
- g. U.S. Patent Application Number 11/112,990 (the “990 application”) (’077 Application)
- h. U.S. Patent Application Number 10/016,517 (the “517 application”) (’733 Application)
- i. File History for U.S. Patent No. 6,384,850 to McNally, et al.
- j. File History for U.S. Patent No. 6,871,325 to McNally, et al.
- k. File History for U.S. Patent No. 8,146,077 to McNally, et al.
- l. CBM2014-00015 – CBM petition for U.S. Patent No.
6,384,850
- m. CBM2014-00016 – CBM petition for U.S. Patent No.
6,871,325
- n. CBM2014-00014 – CBM petition for U.S. Patent No.
8,146,077

- o. CBM2014-00013 – CBM petition for U.S. Patent No.
6,982,733
- p. CBM2014-00015 – Paper 20 – ’850 Institution Decision
- q. CBM2014-00016 – Paper 19 – ’325 Institution Decision
- r. CBM2014-00014 – Paper 19 – ’077 Institution Decision
- s. CBM2014-00013 – Paper 23 – ’733 Institution Decision
- t. Inkpen, Gary, INFORMATION TECHNOLOGY FOR TRAVEL AND
TOURISM (2d ed. 1998)
- u. Timothy Bickmore and Bill N. Schilit, *Digestor: Device
Independent Access to the World Wide Web*, Computer
Networks and ISDN Systems 29, 1075-1082 (1997)
- v. Nokia 9000i Communicator Owner’s Manual (1997)
- w. U.S. Pat. No. 5,948,040 to DeLorme et al.
- x. U.S. Pat. No. 6,058,373 to Blinn et al. (“Blinn”)
- y. McFadden et al., MODERN DATABASE MANAGEMENT (5th ed.
May, 1999), Chapter 11
- z. Micros 8700 HMS Version 2.10 User’s Manual
- aa. Aronson, Larry, *HTML Manual of Style* (1994)

- bb. Jesitus, “Wireless Technology Keeps Customers In Order,”
Hospitality Technology (January 1977)
- cc. *Ameranth, Inc. v. Menusoft Sys. Corp., et al.*, No. 2:07-CV-271,
ECF No. 106 (E.D. Tex. Apr. 21,2010)
- dd. *Ameranth, Inc. v. Par Technology Corp., et al.*, 2:10-CV-294-
JRG-RSP (E.D. Tex.) ECF No. 169 (Claim Construction)
- ee. Definitions from *Microsoft Computer Dictionary* (4th ed. 1999)
- ff. Transcript of Oral Arguments in CBM2014-00013 (Paper No.
34)
- gg. American Heritage Dictionary (3d ed. 1992) (for the definition
of “cascade”)
- hh. [http://catalogue.pearsoned.co.uk/educator/product/Information-
Technology-for-Travel-and-Tourism/9780582310025.page](http://catalogue.pearsoned.co.uk/educator/product/Information-Technology-for-Travel-and-Tourism/9780582310025.page)
- ii. U.S. Patent No. 5,897,622 to Blinn et al.
- jj. U.S. Patent No. 6,107,944 to Behr
- kk. U.S. Patent No. 5,912,743 to Kinebuchi et al.
- ll. U.S. Patent No. 5,724,069 to Chen et al.
- mm. U.S. Patent No. 6,920,431 to Showghi et al.
- nn. U.S. Patent No. 6,301,564 to Halverson et al.

- oo. Complaint for priority in the IPDEV suit – 14-cv-1303
- pp. U.S. Patent No. 5,937,041 to Cardillo
- qq. Micros Systems Inc. “POS Configuration User’s Guide: 3700
POS”
- rr. U.S. PG Pub 2002/0059405 to Angwin
- ss. WIPO Patent Publication No. WO 97/27556 to Flake et al.
- tt. U.S. Patent No. 5,023,438 to Wakatsuki et al.
- uu. U.S. Patent No. 6,300,947 to Kanevsky et al.
- vv. *Ameranth, Inc. v. Menusoft Systems Corp.*, Ameranth Opp. to
non-party Seamless North America, LLC’s motion for leave to
file amicus curiae brief, E.D. Tex. Dkt. No. 2:07-cv-00271 at
ECF No. 336.
- ww. Micros Hand-Held Touchscreen Pre-Release Information (Sept.
8, 1992)
- xx. Thesaurus.com Synonyms for “Ticket”
- yy. U.S. Patent No. 8,738,449 to Cupps, et al.
- zz. U.S. Patent No. 5,974,238 to Chase Jr.
- aaa. *Ameranth v. Menusoft Systems Corp.*, 07-cv-271-RSP, Dkt. 281
(E.D. Tex. 2010) – Opening post-trial JMOL Brief

- bbb. *Ameranth v. Menusoft Systems Corp.*, 07-cv-271-RSP, Dkt. 281
(E.D. Tex. 2010) Opposition JMOL Brief
- ccc. *Ameranth v. Menusoft Systems Corp.*, 07-cv-271-RSP, Dkt. 281
(E.D. Tex. 2010) Order Denying Ameranth's Motion for
JMOL
- ddd. File History of U.S. Patent No. 8,738,449
- eee. Sep. 13, 2010 Trial Testimony. *Ameranth v. MenuSoft*, 07-cv-
271-RSP.
- fff. Sep. 14, 2010 Trial Testimony. *Ameranth v. MenuSoft*, 07-cv-
271-RSP.
- ggg. Sep. 15, 2010 Trial Testimony. *Ameranth v. MenuSoft*, 07-cv-
271-RSP.
- hhh. Bruce Brown, "First Looks: Windows CE 2.0 Cornucopia," PC
Magazine (June 30, 1998)
- iii. Graf, "Modern Dictionary of Electronics" (7th ed. 1999)
- jjj. Matthews & Poulsen, "FrontPage 98: The Complete Reference"
(January 1998)
- kkk. CBM2015-00080 – CBM petition for U.S. Patent No.
6,384,850

lll. CBM2015-00082 – CBM petition for U.S. Patent No.

6,871,325

mmm. CBM2015-00081 – CBM petition for U.S. Patent No.

8,146,077

4. In forming the opinions expressed below, I have considered the documents listed above and my knowledge and experience based upon my work in this area as described below.

I. Qualifications and Professional Experience

5. My qualifications are set forth below. I have over 20 years of experience in software engineering.

6. In 1988, I received a Bachelor of Arts in General Studies focusing on computer science and cognitive science from the University of Texas at Arlington, where I synthesized these fields into a research and development-oriented program that allowed me to pursue issues in artificial intelligence and expert systems that built upon my experience as a programmer.

7. In the early 1990's I was a Methodologist at KnowledgeWare, Inc., where I spent over 4 years designing and developing software applications, advising and managing project teams in the development of Computer-Aided Software Engineering (CASE) tools and researching software engineering methodologies for next generation CASE tools. More notably at KnowledgeWare,

I was the designer and project lead for a suite of hypertext development tools to provide electronic documents for online help systems or other publications as well as serving as an advisory board member for IBM's Common User Access (CUA) committee that shaped the foundations for graphical user interface (GUI) standards in commercial operating systems and applications.

8. In 1995, I began my graduate work earning a Master of Science in Information, Design, and Technology from the Georgia Institute of Technology where I focused on building automatically created Web sites (large sets of Web pages) based on storing Web content in a database and then "publishing" a subset of pages via the Web based on a set of interests or filtering criteria (such as page size) culminating as my master's thesis "Object-Oriented Information Development: A Methodology and System for Large-Scale Hypertext Documents".

9. After Georgia Tech, I went to IBM's first Internet-focused group in the U.S. where I took many of my research ideas about Web technology, Web content management systems, and early personalization techniques to develop a number of related projects for IBM, including the World Book Interactive Encyclopedia, where I was the Lead Technical Architect. We built the first version of a hybrid CD-ROM encyclopedia that would connect to the Internet to let people use the World Book Web site, automate download of new encyclopedia article

content, read and search through the encyclopedia's information in a custom Web browsing application, and provide interactive multimedia demonstrations of encyclopedia content.

10. In 1997, as part of my doctoral research focus at the University of Toronto, I wrote a paper called "Augmenting Information Seeking on the World Wide Web Using Collaborative Filtering Techniques" that encapsulated many current ideas about how people did Web searching and browsing. This paper focused on the history and development of tools, techniques and applications to help people use and discover information on the Web.

11. In 2000, I co-authored a graduate-level university textbook called "Web Work: Information Seeking and Knowledge Work on the World Wide Web" focusing on how people and (business) organizations can use Web technologies to coordinate their activities and use applications to automate their systems for knowledge work. At the same time, I was building a set of data mining tools that analyzed peoples' Web use (browsing, searching, researching, shopping, etc.) into actionable patterns. These tools grew into a more commercial set of ideas, which I then combined with some colleagues at Xerox PARC (Palo Alto Research Center) to form a company called (eventually) Outride in 2000.

12. The Outride system used a hybrid combination of approaches that personalized information retrieval and information system interfaces to power smarter information selection and retrieval. We worked with a number of the large search engine vendors of the time such as Inktomi, Excite and Google, and eventually sold the company to Google in 2001. In 2002, the research team at Outride published an academic paper called “Personalized Search: A Contextual Computing Approach May Prove a Breakthrough in Personalized Search Efficiency” on some aspects of our system in the prestigious academic journal the Communications of the ACM. I then returned briefly to the University of Toronto in 2002 where I finished my doctoral dissertation titled “Knowledge Discovery in Databases of Web Use: A Search for Informetric and Behavioral Models of Web Information Seeking,” wherein I described a set of analytical proofs what I had proven in industry, that my ideas would work in practice as well as contributing to the theory of information retrieval, information interaction and user behavior analysis.

13. Later in 2002, I returned to Texas and accepted a faculty position at the University of Texas at Austin (UT Austin), where as an assistant professor I could continue to pursue my research ideas as well as teach graduate students on the fundamentals and upcoming advances in subjects including Web Information

Retrieval Evaluation & Design, Information Architecture, Interaction Design & Human Computer Interaction (HCI), Web Analytics, the Semantic Web and Knowledge Management systems. While full-time faculty at UT Austin, I investigated very large-scale data mining systems and algorithms (including follow-up work on analyzing Web use data for personalization) and led numerous research projects such as new interfaces for Web search systems including in mobile interaction environments.

14. Now, much of the current work I do is to help software companies – from small startups to large corporations – create new technologies and applications. As such, I continue to research and monitor academic and industry technology development to keep as up to date as possible regarding advances in information systems. My 20+ years as a developer, professor, researcher and software architect means I have read and am aware of a large part of the rich history of computer science research and development. My own history as a software developer and designer places me in the eras of programming PC applications as well as the transition to building Web-based systems and Web sites and continuing forward to apply this experience into mobile computing as well.

15. In summary, I have deep familiarity with the history, research, products, and state of the art for computing and information systems at the time of

the Ameranth Patents, including being the author of a patent for a system that serves interfaces and content for commerce activities in a mobile context. I am the author of many academic publications and have given dozens of presentations on technologies including interaction techniques, novel and standards-compliant interfaces, navigation systems, interaction design, information organization, the history of web browser applications and functionality and mobile technologies.

16. I am familiar with the knowledge and capabilities of one of ordinary skill in the art of software engineering, and notably with building Web-based systems, at the time of the Ameranth Patents. Specifically, my experience (1) in the industry, (2) with undergraduate and post-graduate students, (3) with colleagues from academia, and (4) with engineers practicing in the industry allowed me to become directly and personally familiar with the level of skill of individuals and the general state of the art. Unless otherwise stated, my testimony below refers to the knowledge of one of ordinary skill in the computer software and computer network fields during the 1998-1999 time period.

17. In the general timeframe of the patents in question, I had previously been a software developer creating software applications. This included programming and designing the user interfaces as well as understanding the differences in each operating system's functionality and operation. I was also

designing and researching graphical user interfaces including writing academic papers, attending, and presenting at industry and academic conferences.

Throughout my career, including during this timeframe, I have continually kept aware of developments and progress in application and operating system software from the system internal levels to the user interface.

18. I have reviewed the Ameranth Patents, their prosecution histories, and pertinent art from the field as discussed herein. I have considered these materials in forming the opinions expressed in this declaration, and also have drawn upon my wealth of experience as a person of at least ordinary skill in the art of computer science and software engineering.

19. With a broad knowledge of computer science, and specifically software for (networked) mobile devices, a historical perspective based on active personal participation in the industry, and experience with the patent process, I believe that I am qualified to provide an accurate assessment of the technical issues in this case.

20. My analysis of the materials produced in this investigation is ongoing and I will continue to review any new material as it is provided. This declaration represents only those opinions I have formed to date. I reserve the right to revise,

supplement, and/or amend my opinions stated herein based on new information and on my continuing analysis of the materials already provided.

II. Relevant Legal Standards

21. In expressing my opinions and considering the subject matter of the claims of the '850, '325, and '077 patents, I am relying upon certain basic legal principles that counsel has explained to me.

22. First, I understand that for an invention claimed in a patent to be found patentable, it must be, among other things, new and not obvious in light of what came before it. That which came before is generally referred to as “prior art.”

23. I understand that in this context the burden is on the party asserting unpatentability to prove it by a preponderance of the evidence. I understand that “a preponderance of the evidence” is evidence sufficient to show that a fact is more likely than not.

24. I understand that in this proceeding, the claims must be given their broadest reasonable interpretation (BRI) consistent with the specification. The claims after being construed in this manner are then to be compared to the information in the prior art.

25. I understand that in this proceeding, the information that may be evaluated includes patents and printed publications. My analysis below compares the claims to patents and printed publications that are prior art to the claims. I

understand that there are two ways in which prior art may render a patent claim unpatentable. First, the prior art can be shown to “anticipate” the claim. Second, the prior art can be shown to “render obvious” the claim. My understanding of these two legal standards is set forth below.

A. Anticipation.

26. I understand that the following standards govern the determination of whether a patent claim is “anticipated” by the prior art. I have applied these standards in my evaluation of whether the claims asserted in this investigation are anticipated.

27. I understand that if a prior art reference or prior art product discloses or contains each and every element of a patent claim arranged in the manner recited in the claims, either expressly or inherently, it anticipates and therefore invalidates the claim under 35 U.S.C. § 102. I understand that claim limitations that are not expressly found in a prior art reference are inherent if the prior art necessarily functions in accordance with, or includes, the claim limitations.

28. I understand that prior art is read from the perspective of a person of ordinary skill in the art at the time of the alleged inventions of the Ameranth Patents, and that it is acceptable to examine evidence outside the prior art reference (extrinsic evidence) in determining whether a feature, while not expressly discussed in the reference, is necessarily present within that reference.

B. Obviousness.

29. I understand that a claimed invention is not patentable if it would have been obvious to a person of ordinary skill in the field of the invention at the time the invention was made.

30. I understand that the '850 patent was granted from an application that was filed on September 21, 1999. Ex. 1001. I understand that the '325 patent was granted from an application that was filed on November 1, 2001, and that the '325 patent claims priority to the '850 patent. Ex. 1003. I also understand that the '077 patent was granted from an application that was filed on April 22, 2005, and that the '077 patent claims priority to the '850 patent as well. Ex. 1004. I have therefore used September 21, 1999, as the "Critical Date" in my analysis for the purposes of evaluating indefiniteness and prior art status (e.g., whether a reference qualifies as prior art under 35 U.S.C. § 102(b), in which case it cannot be "sworn behind," or under 35 U.S.C. § 102(a), in which case a patent owner may be able to swear behind the reference). As discussed below in Section IV.A, my opinions as to the level of ordinary skill in the art and obviousness are applicable to the time of the alleged inventions of the Ameranth Patents even if a date of invention earlier than the Critical Date is established by Patent Owner.

31. I understand that the obviousness standard is defined in the patent statute (35 U.S.C. § 103(a)) as follows:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

32. I understand that the following standards govern the determination of whether a claim in a patent is obvious. I have applied these standards in my evaluation of whether claims 12-16 of the '850 patent, claims 11-13 and 15 of the '325 patent, and claims 1-18 of the '077 patent would have been considered obvious at the time of the alleged inventions of the Ameranth Patents.

33. I understand that obviousness may be shown by considering more than one item of prior art. I also understand that obviousness is a question of law that is based on underlying factual issues, and that the relevant inquiry into obviousness requires consideration of four factors (although not necessarily in the following order):

- The scope and content of the prior art;
- The differences between the prior art and the claims at issue;
- The knowledge of a person of ordinary skill in the pertinent art; and

- Whatever objective factors indicating obviousness or non-obviousness may be present in any particular case.

34. In addition, I have been informed that the obviousness inquiry should not be done in hindsight. Rather, the obviousness inquiry should be done through the eyes of a person of ordinary skill in the relevant art at the time of the alleged inventions of the Ameranth Patents.

35. I understand that objective factors indicating obviousness or non-obviousness may include: commercial success of products covered by the patent claims; a long-felt need for the invention; failed attempts by others to make the invention; copying of the invention by others in the field; unexpected results achieved by the invention; praise of the invention by the infringer or others in the field; the taking of licenses under the patent by others; expressions of surprise by experts and those skilled in the art at the making of the invention; and the patentee's approach being contrary to the accepted wisdom of the prior art.

36. I understand that the combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results. I understand that when a work is available in one field of endeavor, design incentives and other market forces can prompt variations of that work, either in the same field or a different field. If a person of ordinary skill can implement a predictable variation, that variation would have been considered obvious. I

understand that for similar reasons, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using that technique to improve the other device would have been obvious unless its actual application yields unexpected results or challenges in implementation.

37. I understand that the obviousness analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, but instead can take account of the “ordinary innovation” that does no more than yield predictable results, which are inferences and creative steps that a person of ordinary skill in the art would employ.

38. I understand that sometimes it will be necessary to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art. I understand that all these issues may be considered to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.

39. I understand that the obviousness analysis cannot be confined by a formalistic conception of the words “teaching, suggestion, and motivation.” I understand that the Supreme Court’s decision in *KSR Int’l Co. v. Teleflex, Inc.*

rejected the previous requirement of a “teaching, suggestion, or motivation to combine” known elements of prior art for purposes of an obviousness analysis as a precondition for finding obviousness. It is my understanding that *KSR* confirms that any motivation that would have been known to a person of skill in the art, including, common sense, or derived from the nature of the problem to be solved, is sufficient to explain why references would have been combined.

40. I understand that a person of ordinary skill attempting to solve a problem will not be led only to those elements of prior art designed to solve the same problem. I understand that under the *KSR* standard, common sense is important and should be considered. Common sense teaches that familiar items may have obvious uses beyond the particular application being described in a reference, that if something can be done once it is obvious to do it multiple times, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle. As such, the prior art considered can be directed to any need or problem known in the field of endeavor at the time of the invention and can provide a reason for combining the elements of the prior art in the manner claimed. In other words, the prior art does not need to be directed towards solving the same problem that is addressed in the patent. Further,

the individual prior art references themselves need not all be directed toward solving the same problem.

41. I understand that an invention that might be considered an obvious variation on, or modification of, the prior art, may nonetheless be considered non-obvious if one or more prior art references discourages or leads away from the line of inquiry disclosed in the reference(s). A reference does not “teach away” from an invention simply because the reference suggests that another embodiment of the invention is optimal or preferred. My understanding of the doctrine of teaching away is that the doctrine requires some clear discouragement of that combination in the prior art – such as expressly stated reasons why one should not make the claimed combination or invention.

42. I understand that a person of ordinary skill is also a person of ordinary creativity. I further understand that in many fields, it may be that there is little discussion of obvious techniques or combination, and it often may be the case that market demand, rather than scientific literature or knowledge, will drive design trends. When there is such a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within their technical grasp. If this leads to the anticipated success, it is likely to be the product not of

innovation but of ordinary skill and common sense. In that instance the fact that a combination was obvious to try might show that it was obvious. The fact that a particular combination of prior art elements was “obvious to try” may indicate that the combination was obvious even if no one attempted the combination. If the combination was obvious to try (regardless of whether it was actually tried) or leads to anticipated success, then it is likely the result of ordinary skill and common sense rather than innovation.

C. Indefiniteness

43. 35 U.S.C. § 112, second paragraph (pre-AIA), states that the “specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the application regards as his invention.” I have been informed by counsel that claims that fail to satisfy this standard are indefinite and therefore unpatentable. I also understand that there are two possible standards that might be applicable in this proceeding. Under the recent Supreme Court decision in *Nautilus Inc. v. BioSig Instruments, Inc.*, a patent claim is indefinite if it fails to inform, with reasonable certainty, those skilled in the art about the scope of the invention. I understand that a claim is more easily found to be indefinite under this standard as compared to the Federal Circuit’s previous “insolubly ambiguous” standard. I have further been informed by counsel that the standard for finding a claim indefinite is lower in proceedings before the Patent

Office. For example, under this lower standard, if a person of ordinary skill in the relevant art would read a claim with more than one reasonable interpretation, it is indefinite. I understand that this standard is rooted in the application of the broadest reasonable interpretation claim construction standard and the opportunity to amend the claims, both of which are applicable to the Transitional Program for Covered Business Method Patents. Unless otherwise noted herein, my indefiniteness analysis is equally applicable to both standards.

III. Background Of The '850, '325, and '077 Patents

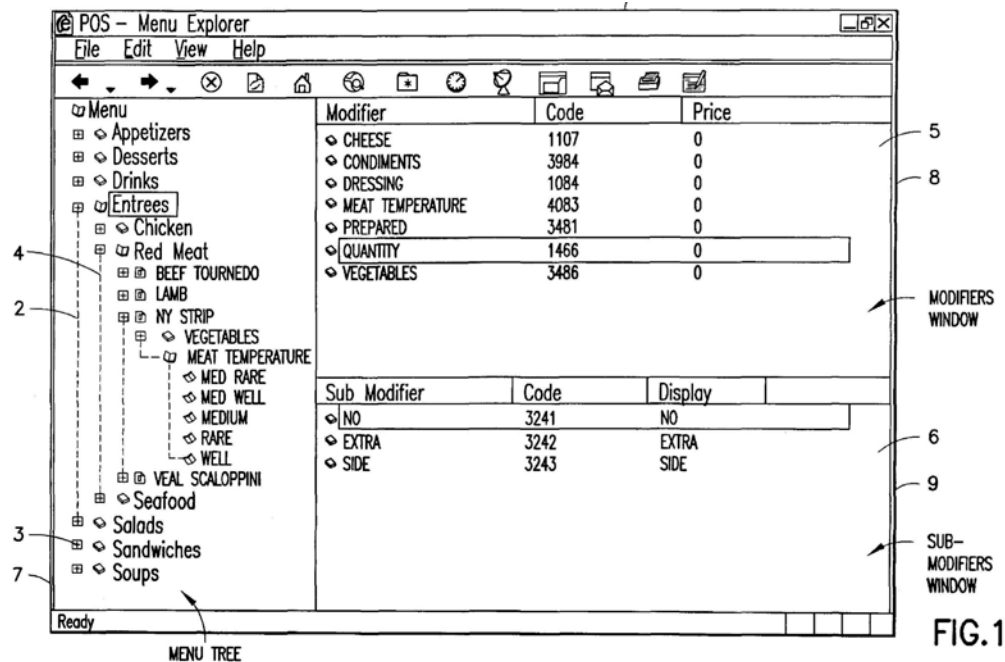
A. The '850 Patent

44. The '850 Patent was filed on September 21, 1999.

45. The '850 Patent relates to an information system that facilitates creating a database of restaurant menu content and syncing a database of restaurant menu content among devices using Web-based technologies to generate and display restaurant menus on various computing devices of the time. Ex. 1001, Abstract.

46. A primary theme of the '850 patent, and the “principal object” of the alleged invention described therein, is to provide a system that “facilitates user-friendly and efficient generation of computerized menus for restaurants and other applications that utilize equipment with non-PC-standard graphical formats, display sizes and/or applications.” Ex. 1001 at 2:56-62. The generation of menus

is the subject of claims 1-11, and a large majority of the specification is devoted to describing such menus and how they are generated. Figure 1 below, attempts to show the basic operation of the database menu application as described in the '850 patent:



47. As shown in Figure 1 above, the information system to create and modify a menu system appears similar, if not identical to many commercial database GUIs of the time. Items and item (sub) categories can be added using a familiar tree-like interface common at the time. Figures 2-7 of the '850 Patent show specific, yet derivative examples of the computer application functionality to edit the restaurant menu content database information. Ex. 1001 at 4:25-55. It is notable that there are no figures depicting the restaurant menu content generated on

a wireless handheld device. Moreover, there is no substantive description of the methods used to transfer or format the menu content from the computer to the wireless handheld device.

48. Claims 12-16 of the '850 patent at issue here, however, do not even recite the term "menu" or any other limitations relating to menu generation. These claims are instead directed toward an "information management and synchronous communications system for use with wireless handheld computing devices and the internet." Ex. 1001 at 16:1-3. The system of claims 12-16 includes "a central database," "at least one wireless handheld computing device," "at least one web server," "at least one web page," and "a communications control module." Ex. 1001 at 16:4-14. "Hospitality applications and data" are stored on the wireless handheld computing device, the web server and the web page; and the central database contains "hospitality applications and data." *Id.* The hospitality applications and data are "synchronized" between the central database, the web server, the web page and the wireless handheld computing device. *Id.* at 15-17.

49. The '850 patent does not provide any diagram of the system formed by the components of claim 12, and claim 12 does not specify any relationship between these components. As shown in Figure 1 above, the information system to create and modify a menu system appears similar, if not identical to many

commercial database GUIs of the time. Items and item (sub) categories are allowed to be added using a familiar tree-like interface common at the time. It is notable that there are no figures depicting the restaurant menu content generated on a wireless handheld device. Moreover, there is no substantive description of the methods used to transfer or format the menu content from the computer to the wireless handheld device. Thus, it is not clear to one of ordinary skill in the art how some of these various components are connected to each other and/or interact with each other.

50. The “application program interface” (“API”) recited in claim 12 is mentioned only four times in the specification, and all that is disclosed about the API is that (1) it is a feature that is missing from software for fully realizing the potential of wireless handheld computing devices and (2) it “enables third parties such as point of sale (“POS”) companies, affinity program companies and internet content providers to fully integrate with computerized hospitality applications.” Ex. 1001 at 2:5-15; 3:63-67, and 11:15-18. The specification of the ’850 patent does not specify whether this application program interface software runs on the wireless handheld computing device or one of the other devices recited in claim 12 and does not explain what functions the API performs or how it enables POS companies, affinity program companies, or internet content providers to “fully

integrate” with the computerized hospitality applications that claim 12 requires be stored on the web page, the web server and the wireless handheld computing device. Accordingly, the location where the API resides in the system of claim 12 and what the API does is unclear.

51. The specification leaves unanswered several questions concerning the “communications control module.” This module is described in the ’850 patent specification as a program to monitor all devices in the network, receiving and decoding messages sent between the devices, and routing the messages to the appropriate device. Ex. 1001 at 9:21-48. The communications control module is also described as a “layer that sits on top of any communications protocol” that “provides a single point of entry for all hospitality applications to communicate with one another wirelessly or over the web.” Ex. 1001 at 11:24-30. The specification does not explain if the communications control module “layer” is a single piece of software that runs on a device (sometimes referred to in the art as a communications controller or front end processor) or multiple instances of software, each of which runs on a respective web page, web server, wireless handheld computing device and central database. The similarity of the phrase “communications control module” to the art-recognized phrase “communications controller” and the description of the communications control module as a single

point of entry and as performing a routing function suggest the former, whereas the description of a “layer that sits on top of any communications protocol” suggests the latter.

52. The specification also states that the “single point of entry” that is provided by the communications control module “works to keep all wireless handheld devices and linked Web sites in synch with the [central database] so that the different components are in equilibrium at any given point in time and an overall consistency is achieved.” Ex. 1001 at 11:32-36. The specification is silent, however, as to exactly what “work” the communications control module does to keep all wireless handheld devices and linked websites in synch with the central database. Thus, it is not clear if this “work” is simply facilitating communications between these components, or is some additional functionality.

53. As for synchronization, there is also no description of the method, in fact a primitive, obvious method is noted: “If there is an existing menu database on the handheld device, the system will ask if the existing database should be replaced. Yes is clicked if existing database replacement is desired.” Ex. 1001 at 8:56-59. This method is hardly any kind of synchronization as that term is typically used by those of skill in the art, but rather a simple overwrite of the file(s) on the handheld wireless device. In addition to this lack of functionality or the teaching of

any kind of synchronization, the written description notes that: “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.” Ex. 1001 at 11:43-48.

54. Claim 1 provides a basic overview of the teachings of the ’850 Patent “An information management and synchronous communications system for generating and transmitting menus” comprising a typical computing environment including a central processing unit (CPU), a storage device, and an operating system (OS) that supports a graphical user interface (GUI). This system (a software application) includes the ability to display restaurant menu content such as categories of menu items and allow for the modification of menu categories and items.

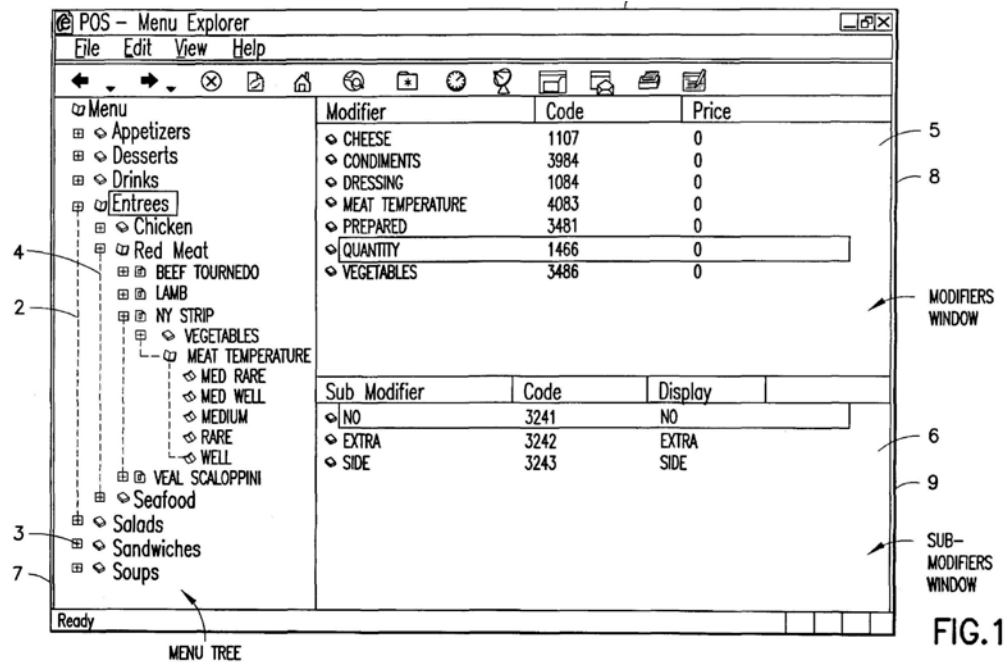
55. Claim 12 recites, among others, “a central database containing hospitality applications and data” (Ex. 1001 at 16:4-5) and a “communications control module” described only as “an interface between the hospitality applications and any other communications protocol.” Ex. 1001 at 16:21-22.

56. Claim 12 further requires that the communications control module “is an interface between the hospitality applications and any other communications

protocol” Ex. 1001 at 16:20-22. This requirement is problematic for the reasons discussed below and thus creates additional confusion as to the nature of the communications control module.

B. The '325 Patent

57. A primary theme of the '325 patent, and the “principal object” of the alleged invention therein, is to provide a system that “facilitates user-friendly and efficient generation of computerized menus for restaurants and other applications that utilize equipment with non-PC-standard graphical formats, display sizes and/or applications.” Ex. 1003 at 2:56-60. Menu generation is the subject matter of claims 1-10, which are the subject matter of a prior CBM proceeding (CBM2014-00016), and a large majority of the specification is devoted to describing such menus and how they are generated. Figure 1 below, attempts to show the basic operation of the database menu application as described in the '325 patent:



58. As shown, the information system to create and modify a menu system appears similar, if not identical to many commercial database GUIs of the time. Items and item (sub) categories can be added using a familiar tree-like interface common at the time. Figures 2-7 of the '325 Patent show specific, yet derivative examples of the computer application functionality to edit the restaurant menu content database information. Ex. 1003 at 4:30-60. It is notable that there are no figures depicting the restaurant menu content generated on a wireless handheld device. Moreover, there is no substantive description of the methods used to transfer or format the menu content from the computer to the wireless handheld device.

59. Claims 11-13 and 15 of the '325 patent at issue here, however, do not recite “menu” or any other limitations relating to menu generation. *See*, Ex. 1003 at Claims 11-13 and 15. The claims are instead directed toward an “information management and synchronous communications system.” *Id.* The system of the Challenged Claims includes “a central database,” “at least one handheld wireless computing device,” “at least one web server,” “at least one web page,” and “a communications control module.” *See e.g.*, Ex. 1003 at 17:7-17. “Hospitality applications and data” are stored on the handheld wireless computing device, the web server and the web page, and the central database. *Id.* The hospitality applications and data are “synchronized” between the central database, the web server, the web page and the wireless handheld computing device. *Id.* at 17:18-20; *see also* Ex. 1018 at pp. 4-5.

60. The '325 patent does not provide any diagram of the system formed by these components, and independent claims 11-13 do not specify any relationship between these components. Thus, it is not clear to one of ordinary skill in the art how these various components are connected to each other and/or interact with each other.

61. The “application program interface” (“API”) recited in claims 11-13 is mentioned only three times in the specification, and all we are told about the API

is that it is a feature that is missing from software for fully realizing the potential of wireless handheld computing devices and that it “enables third parties such as point of sale (“POS”) companies, affinity program companies and internet content providers to fully integrate with computerized hospitality applications.” Ex. 1003 at 2:9-19; 4:1-5, and 11:28-31. The specification of the ’325 patent does not specify whether this application program interface software runs on the wireless handheld computing device or one of the other devices recited in claims 11-13 and does not explain what functions the API performs or how it enables POS companies, affinity program companies, or internet content providers to “fully integrate” with the computerized hospitality applications that claims 11-13 require be stored on the web page, the web server and the wireless handheld computing device. Accordingly, the location where the API resides in the system of claims 11-13 and what the API does is unclear.

62. The specification leaves unanswered several questions concerning the “communications control module.” This module is described in the ’325 patent specification as a program to monitor all devices in the network, receiving and decoding messages sent between the devices, and routing the messages to the appropriate device. Ex. 1003 at 9:35-63. The communications control module is also described as a “layer that sits on top of any communications protocol” that

“provides a single point of entry for all hospitality applications to communicate with one another wirelessly or over the web.” Ex. 1003 at 11:37-43. The specification does not explain if the communications control module “layer” is a single piece of software that runs on a device (sometimes referred to in the art as a communications controller or front end processor) or multiple instances of software each of which runs on a respective web page, web server, wireless handheld computing device and central database. The similarity of the phrase “communications control module” to the art-recognized phrase “communications controller” and the description of the communications control module as a single point of entry and as performing a routing function suggest the former, whereas the description of a “layer that sits on top of any communications protocol” suggests the latter.

63. The specification also states that the “single point of entry” that is provided by the communications control module “works to keep all wireless handheld devices and linked Web sites in synch with the [central database] so that the different components are in equilibrium at any given point in time and an overall consistency is achieved.” Ex. 1003 at 11:45-49. The specification is unclear, however, as to exactly what “work” the communications control module does to keep all wireless handheld devices and linked websites synchronized with

the central database. There is no description of the method used to achieve what is commonly understood as synchronization. In fact a primitive, obvious method is noted: “If there is an existing menu database on the handheld device, the system will ask if the existing database should be replaced. Yes is clicked if existing database replacement is desired.” Ex. 1003 at 8:56-59. This method is hardly any kind of synchronization as that term is typically used by those of skill in the art, but rather a simple overwrite of the file(s) on the handheld wireless device. In addition to this lack of functionality or the teaching of any kind of synchronization, the written description notes that: “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.” Ex. 1003 at 11:56-61.

64. Claims 11-13 recite, among others, “a central database containing hospitality applications and data” (Ex. 1003 at 17:7-8, 17:31-31, and 13:13-14) and a “communications control module” described only as “an interface between the hospitality applications and any other communications protocol.” Ex. 1003 at 17:23-25, 17:6-8, and 17:29-31.

65. Claims 11-13 require that the communications control module “is an interface between the hospitality applications and any other communications protocol.” Ex. 1003 at 17:23-25, 18:6-8, and 18:29-31. This requirement is problematic for the reasons discussed below and thus creates additional confusion as to the nature of the communications control module.

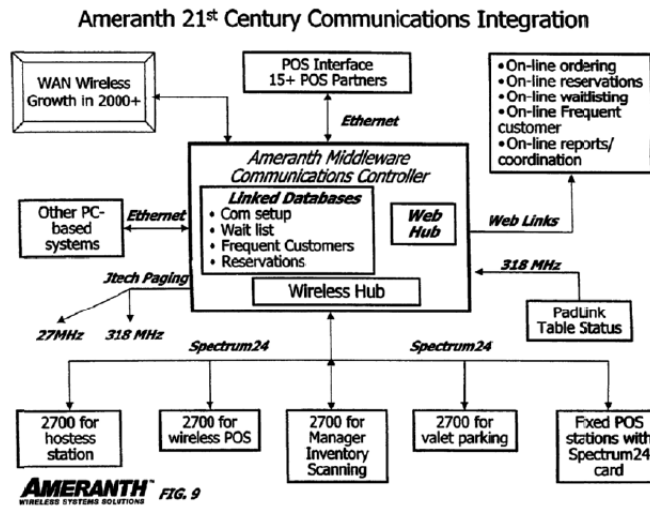
C. The '077 Patent

66. I understand and agree with the Board in its previous finding that a “principal object” of the '077 patent “is to provide an improved information management and synchronous communications system and method which facilitates . . . generation of computerized menus for restaurants and other applications that utilize equipment with non-PC-standard graphical formats, display sizes and/or applications.” Ex. 1019 at 3 (quoting Ex. 1004, '077 patent at 2:61-67). According to the '077 patent, handheld wireless computing devices such as PDAs had not previously been “quickly assimilated into the restaurant and hospitality industries” due to their small display sizes. Ex. 1004 at 2:12-17; Ex. 1019 at pp. 2-3. The '077 patent addresses this problem by reformatting menus to display on wireless handheld computing devices as “cascaded sets of linked graphical user interface screens.” Ex. 1004 at 16:3-4.

67. In addition to reformatting menus for the small screen sizes of wireless handheld devices, the '077 patent is also directed toward keeping the

menus displayed on such wireless handheld computing devices and on other user devices synchronized with a master menu stored in a master database. The '077 patent describes its preferred embodiment as a “synchronous communications control module . . . [that] provides a single point of entry for all hospitality applications to communicate with one another wirelessly or over the Web.” Ex. 1004 at 12:39-42. “The single point of entry works to keep all wireless handheld devices and linked Web sites in synch with the backoffice server (central database).” Ex. 1004 at 12:47-49. This allows for “a reservation made online [to be] automatically communicated to the backoffice server which then synchronizes with all the wireless handheld devices wirelessly.” Ex. 1004 at 12:51-54.

68. Figure 9 from the '077 patent (reproduced below) is “an exemplary system diagram that illustrates how ‘[a] single point of entry 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.’” Ex. 1019 at pp. 5-6, quoting Ex. 1004 at 5:29-33.



IV. Claim Construction

69. It is my understanding that in order to properly evaluate the patentability of the '850, '325, and '077 Patents, the terms of the claims of these patents must first be interpreted, or construed. It is also my understanding that the claims are to be given their broadest reasonable construction in light of the specification. It is my further understanding that claim terms are given their ordinary and accustomed meaning as would be understood by one of ordinary skill in the art, unless the inventor, as a lexicographer, has set forth a special meaning for a term in the specification.

70. As part of the claim construction process, I considered the context of the terms within the claim, use of the terms within the specification of the Ameranth Patents, as well as their prosecution histories. I have then construed the

claims as my understanding of how a POSITA would have understood the terms as of the Critical Date.

A. Level of Ordinary Skill in the Art

71. All of the Ameranth Patents claim priority to an application filed in September, 1999 and upon which the '850 Patent issued. I further understand that Ameranth claims that at least some of the alleged inventions claimed in the Ameranth Patents were conceived and reduced to practice earlier in 1999 or even some time in 1998. Unless otherwise noted, my opinions with respect to level of ordinary skill in the art and as to what one of ordinary skill in the art would have found indefinite or obvious is the same for any of these periods, which I will refer to as the time of the alleged inventions of the Ameranth Patents. With respect to the technologies disclosed and claimed in the Ameranth Patents, one of ordinary skill in the art at the time of the alleged inventions of the Ameranth Patents (hereinafter a "POSITA") would have had a Bachelor's degree in either electrical engineering or computer science and up to two years of experience in the fields of developing software for wireless networks and devices, developing Internet-based systems or applications, or an equivalent experience in software development of up to 5 years.

72. I am familiar with the knowledge and capabilities of one of ordinary skill in these areas, including with designing and developing Internet-based

communication systems and applications. Specifically, my experience in the industry, with undergraduate and post-graduate students, with colleagues from academia, and with other software engineers practicing in the industry has allowed me to become directly and personally familiar with the level of skill of individuals and the general state of the art. Unless otherwise stated, my testimony below refers to the knowledge and understanding of a POSITA as defined above.

B. “Web page”

73. I understand the Board previously construed this claim term as “a document, with associated files for graphics, scripts, and other resources, accessible over the internet and viewable in a web browser” in Ex. 1017 at 8. I agree with this construction, and I have used this construction in my analysis herein.

C. “applications”

74. I have considered interpretation of the term “applications” as used in the ’850 and ’325 patents. This claim term should be construed to mean “sequences of instructions that can be executed on a computer that are designed to help people perform a specific task.” Ex. 1034 at pp. 4 and 10 (definitions of “application” and “program”); *see also* Ex. 1002 at ¶ 36. This construction should be understood to be broad enough to include an executable object of code that performs a set of operations in a specific operating system. The Microsoft Press

Computer Dictionary (4th edition, 1999) defined an application as a “program designed to assist in the performance of a specific task, such as word processing, accounting, or inventory management.” Ex. 1034 at (p. 4). A POSITA would also understand that an application would be architected and developed to perform the functionality described in the ’850 patent, but would use many existing functions and programming language libraries available for the chosen operating system and would require (in the case of the ’850 patent) very little or no original invention of algorithms or functions to perform the methods described.

D. “application program interface”

75. I have considered interpretation of the phrase “application program interface” (API) as used in the ’850, ’325, and ’077 patents. This claim term should be construed to mean “a set of routines used by an application program to direct the performance of procedures by the computer’s operating system or to communicate with another application program.” This construction should be understood to be sufficient broad to include any number of pre-existing programs (including operating system programs and other programs) that could be called or invoked inside a programmed application to use the functionality of the pre-existing program within a set of parameters and functions as described by the external program documentation. The Microsoft Press Computer Dictionary (4th edition, 1999) defined an application programming interface as a “set of routines

used by an application program to direct the performance of procedures by the computer's operating system." Ex. 1034 at 5. In my opinion, a POSITA reading the Ameranth Patents' specifications would understand an application programming interface as a method to utilize already written routines or functions instead of developing the routines or functions from scratch, and would not understand application program interfaces to be limited to operating system calls as indicated in Ex. 1034.

E. "communications control module"

76. I have considered interpretation of the phrase "communications control module" as used in the '850, '325 and '077 patents. This claim term should be construed to mean "a device used as an intermediary in transferring communications to and from the host computer to which it is connected." Ex. 1034 at 7 (definition of "communications controller").

77. From my review, and although there is some inconsistency in the way in which the specifications of the Ameranth Patents use this term as noted above, I believe the communications control module is a single program and "provides a single point of entry" (*see e.g.*, Ex. 1001 at 11:25) in the application that monitors and moves data to a communications device as appropriate "either wirelessly or over the Web." *id.* at 11:26-27. There is no definition of a communications control module in The Microsoft Press Computer Dictionary (4th edition, 1999).

78. In my opinion, a POSITA would understand the communications control module as a single application or set of functionality in a hospitality application as described in the '850 and '325 patents that is the only (“single”) interface to perform all the described communication claimed. Note that a POSITA would recognize that the description of the communications “either wirelessly or over the Web” is an incorrect description of the layers of communications in all standard computing systems in that Web-based communication use wired or “wireless” connections, not wireless or Web as mutually exclusive choices.

F. “database”

79. From my review, I believe that a database is the central location for hospitality data on the computer. The Microsoft Press Computer Dictionary (4th edition, 1999) defined a database as a “file composed of records, each containing fields together with a set of operations for searching, sorting recombining, and other functions.” Ex. 1034 at 8.

80. In addition, I would consider the phrase “database equilibrium” to be a phrase that is not common to a POSITA and imbues no standard or precise functional meaning.

G. “data are synchronized between the central database, the at least one wireless handheld computing device, at least one Web server and at least one Web page”

81. I have considered interpretation of this phrase as used in the '850 and '325 patents. From my review, I believe that the phrase is incongruent with how a POSITA would describe any similar application functionality. To be clear, to the extent that this phrase references synchronization between a central database, a Web server and a Web page, the phrase is not discussing the function between equals. First, data within a central database, which would be controlled via at least one Web server, would in turn control the synchronization of data to a client device (which could be the wireless handheld client device or a desktop PC), then in turn to the client device's Web browser application (which is not described in this phrase), which would in turn display a Web page on the client device based on the instructions from the Web server and the information transmitted to the Web browser in the form of HTML content including the data (e.g., a menu). Note that a Web page is typically sent as a document that may reference one or more additional documents, and, for example, typically does not incorporate data from a database on the client device. It should further be noted that Web pages are typically not sent from a Web server to a client device until they are requested from the client device, which may occur long after a revised Web page is first made available at the server. The Ameranth patents include no disclosure of how

this typical Web functionality behavior would be modified. Also note that there is no mention of where non database data (e.g., images incorporated into the HTML document through links to external documents) is stored and sent to the Web browser). Secondly, if the data on the client device Web browser is updated, this data is then communicated back through the Web browser to the Web server and then to the central database.

82. In my opinion, a POSITA would understand this phrase as a poor functional claim for any kind of data synchronization or data management and be left to his own understanding and implementation of very commonly-known functionality to deploy to achieve a method of data synchronization.

83. This claim term should therefore be construed to mean “the same data is present in each of the central database, the at least one wireless handheld computing device, at least one Web server and at least one Web page at one time.” As asserted by Patent Owner during oral argument in CBM2014-00013, downloading a menu from one device to another device constitutes synchronization. Ex. 1035 at pp. 31-32. Similarly, plaintiff’s infringement contentions dated July 22, 2013 concerning this claim element refer to “communications control software [that] interfaces with ... hospitality applications including online/mobile ticketing or reservations systems such as Fandango,

StubHub, Ticketmaster, LiveNation, and Starwood, in providing a single point of entry into the Accused System, allows and facilitates synchronization and consistency of Passbook passes and associated data among at least one Web page (e.g., an email that allows a pass to be stored on an iPhone), at least one handheld device (e.g., and end user's iPhone), and the iCloud." Ex. 1060 at 43. Patent Owner should be held to a broad construction here that is consistent with these assertions.

H. "hospitality application information"

84. I understand that the Board has previously construed this claim term as "information used to perform services or tasks in the hospitality industry." Ex. 1004 at 5:17-18; Ex. 1019 at pp. 16-17. I agree with this construction and have used it in my analysis herein.

I. "synchronized"

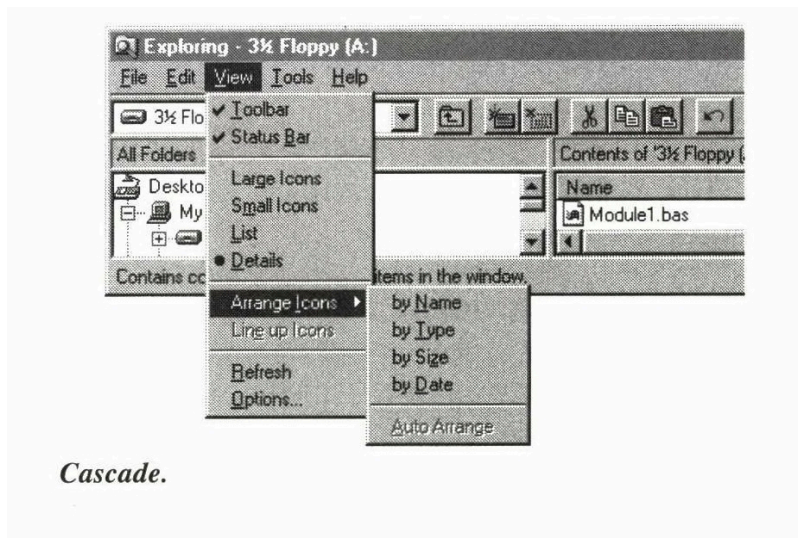
85. I understand that the Board has previously construed this claim term as "made to happen, exist, or arise at the same time." Ex. 1019 at pp. 17-18. I agree with this construction and have used it in my analysis herein. Also, as discussed above, it has been asserted by Patent Owner during oral argument in CBM2014-00013 that downloading a menu from one device to another device constitutes synchronization, and therefore this claim term should be understood to

be sufficiently broad as to encompass such functionality. Ex. 1035 at 31-32.

“Synchronous” in these claims should be similarly construed.

J. “cascaded sets”

86. I understand that the Board has previously construed this claim term as “sets whose members are arranged in succession.” In the context of the Patents and a menu user interface, I agree with this construction and have used it in my analysis herein. More specifically, the Microsoft Press Computer Dictionary (4th edition, 1999) defined a cascade in a menuing context as “Additional elements displayed by a menu item or list box from which the user can choose in order to interact with other screen elements. See the illustration.”:



Ex. 1034 at 6.

87. This construction and illustration show the graphical display of information in a hierarchical tree format such and would be commonly understood

by a POSITA. This construction comports with the plain meaning of “cascade” as “a succession of stages, processes, operations or units.” Ex. 1036 at 3.

K. “graphical user interface screens”

88. I understand that the Board has previously construed this claim term as “a plurality of screen displays that provide an interface for user operations, such as menu selections.” Ex. 1019 at pp. 18-19. I agree with this construction and have used it in my analysis herein.

L. “unique to the wireless handheld computing device”

89. I understand that the Board previously construed this claim term as “distinctly characteristic of the wireless handheld computing device.” Ex. 1019 at 20. I agree with this construction and have used it in my analysis herein.

M. “real time”

90. I understand that the Board has not previously construed this claim term. In my opinion, in the context of the Ameranth Patents, and under the BRI standard applicable here, this term should be construed to mean “a data-processing technique in which information is utilized as events occur and the information is generated, as opposed to batch processing at a time unrelated to the time the information was generated.” I have been informed by counsel that this definition, which is taken from the definition of “real time operation” from the Seventh edition of the Modern Dictionary of Electronics (1999) (Ex. 1066 at 627), was

among those cited in the Federal Circuit’s opinion in *Paragon Solns, LLC v. Timex Corp.*, 566 F.3d 1075, 1094 (Fed. Cir. 2009). This construction is consistent with the distinction drawn in the ’077 patent between “real time communication over the internet” and “support for batch processing that can be done periodically throughout the day.” Ex. 1004 at 2:27-31.

V. State of the Prior Art

A. Internet and the World-Wide Web and eCommerce

91. Tim Berners-Lee (the original architect of the technologies HTML and the HTTP protocol) is credited with inventing the World Wide Web (or “web”) in 1990, primarily as a system to permit research scientists to quickly and easily exchange research information, reports, and results with one another. By late 1991, the first World Wide Web server in the United States was installed and running at the SLAC laboratories at Stanford University. By the end of 1993, the National Center for Supercomputing Applications (NCSA) released versions of the Mosaic web browser for X Windows (March, 1993), Windows and Macintosh PCs (September, 1993). Almost immediately, developers began to think about and invent technologies to permit buyers and sellers to interact on the web in a virtual marketplace.

92. The easy, graphical interface for these Web browsers made navigating hypertext Web documents and surfing from one Web site to another easy and

caused a shift in how we all access information, be it for work, entertainment or commerce. The graphical user interface of Web browsers enabled businesses to present their wares as metaphorical content catalogs, menus or even simple lists of merchandise or services via Web pages. The use of a Web server(s) that acted as a gateway using well-known application programming interfaces (APIs) to coordinate the creation, storage and updating of the data (including databases), host applications that provided functionality for any kind of commerce activity that could be accessed via any number of Web browsers.

B. Mobile Devices

93. The development and use of mobile computing devices has a long history which follows the general trends since the earliest computers of making computing devices smaller and more efficient. As computing hardware became less expensive to develop and manufacture, it is natural that computing devices moved towards mobility. In the mid-90's, as the Internet was becoming more pervasive, consumer computing companies were developing mobile, handheld computing devices, more notably with such popular devices such as the Apple Newton MessagePad in 1993, the PalmPilot in 1996, WindowsCE devices such as the Casio Cassiopeia A-10. As the use of the Internet as a communications system grew, companies naturally enabled their mobile devices to connect and access information sources via the Internet such as the Nokia 9000i Communicator in

1995, later versions of the WindowsCE operating system, as well as devices such as the Palm Treo.

94. Much like the development of desktop Web browsers to facilitate eCommerce via the Internet, mobile devices also provided the ability for end users or business owners (salepeople) to use mobile devices. In many ways, the architecture and applications that originally supplied desktop computer access to the Web were already well-suited for mobile device characteristics such as small screen size. The standard desktop Web browser of the time allowed for resizing a browser window and changing the font size (in this case smaller) of information in a Web browser window with the same quality of interaction. As each vendor developed mobile browsers, they could use this browser adaptability, in some cases starting with desktop Web browser source code, to make a customized mobile device Web browser with similar functionality and utility as available on desktop Web browsers at the time.

95. At the Critical Date of the Patents, there were a number of well-known, commercially available portable computing devices such as cellular phones, PDAs and handheld computers such as the Apple Newton MessagePad, SONY MagicLink, Windows CE devices from Compaq, Casio and NEC; various Palm Computing PDAs; as well as a number of devices from Nokia and Motorola.

These devices all supported the use of Web browsers including such browser applications as NetHopper, MagicLink, Top Gun Wingman, and Microsoft Mobile Explorer. These handheld device browsers would be well-known to a POSITA and were being created, discussed and improved upon as early as 1994.

96. The added convenience of the Web protocol HTTP and the methods Web servers used to communicate with Web browsers of any kind made many of the issues of using non-Web-based information systems on a mobile device simple. For example, Web browser content could be dynamically reauthored to provide a smaller browser screen's worth of content, such as text, buttons and set of lists including menus, once the mobile device's screen size was known as well as the application of additional Web server applications or proxies as detailed in Nokia's 9000i Web browser or as with Bickmore's Digestor application.

97. Moreover, one of the previously challenges with remotely accessing an information system was coordinating data including syncing database information between devices. The advantage of using an Internet-enabled Web server as the database connector or gateway meant that there could be a (usually) central database that was updated via commands from the Web server as the Web server communicated with a Web browser, regardless of the Web browser's location on the Internet or the Web browser's device type, be it desktop or mobile.

98. The result of this advantage is that the use of a Web-based system provides a foundation for a mobile eCommerce system that can be accessed by a mobile device and with little comparable difficulty, be customized to provide the broad range of functionality of an eCommerce system including information display, data entry, information synchronization and centralized control of the (mobile) browser interface and content.

99. I further note that many “legacy” system (systems that were developed before the widespread use of Internet browsers and the World Wide Web) were still in use at the time of the alleged inventions of the Ameranth Patents. A perfect example is the Micros 8700 HMS system. Many of these legacy systems continued in use during and beyond this period because of the cost associated with converting them to a Web-based system. This does not mean, however, that a POSITA tasked with implementing such a system would not have found it obvious to implement such systems using Web-based technology. Indeed, an example of such cost concerns is discussed in Inkpen, which discloses that Marriott had chosen to delay implementing a direct interface to the MARSHA system for taking reservations due to the cost issues. Ex. 1021 at 230.

VI. Overview of the Asserted Prior Art

100. The Inkpen reference “Information Technology for Travel and Tourism” (2nd edition, 1998) is a broad, comprehensive textbook survey on the

recent history at the time of publishing of how hospitality companies such as airlines or hotels manage their data to provide services including flights, lodging and associated goods including meals. Inkpen includes the use of Internet or Web-based information systems to provide hospitality by managing data including issues that are the focus of the '850 patent such as data synchronization with examples such as (portable) smart card data used in a GDS (global distribution system), the Marriott MARSHA application and the TARSC MUSDAT system.

101. The Bickmore and Schilit reference describes an application (developed at the FX Palo Alto Laboratory where I have visited myself) called “Digester” that automatically generates appropriately formatted Web pages on small screen devices such as PDAs and cellular phones. The authors deconstruct various approaches for formatting Web pages for device-independent access and develop what they call a set of “re-authoring techniques” such as “outlining” that reduces the content on a page of a structured documents (including lists of items) and even reducing the size of images to fit a device’s display characteristics by using an application that runs on a Web (proxy) server which in then sends (syncs) the “digested” content to the small-screen device’s Web browser.

102. The Owner’s Manual for the Nokia 9000i communications device is a reference that describes the overall functionality and appearance of the Nokia

9000i Communicator. Most notably, the 9000i manual explains how a user can access a Web page via the World Wide Web (p 7-11) and scroll and select hyperlink list items on the screen in the Web browser application.

103. The Micros 8700 HMS User's Manual is a comprehensive reference guide to the wireless, handheld 8700 HMS (Hospitality Management System) "an integrated Point-Of-Sale (POS) system comprising modular hardware and flexible, user-configured software". (p 1-2) Functionality described for the 8700 HMS includes basic user operations on data such as accessing, viewing editing restaurant menu data as well as transacting sales and updating a central inventory database. Note that to a POSITA, updating a central inventory database as described in the Micros 8700 HMS User's Manual involves the programmatic actions such as creating, updating and deleting records in a database and that these three main actions are the foundation of database synchronization.

104. The Blinn reference, U.S. Patent No. 6,058,373 (Ex. 1025, "Blinn"), by Arnold Blinn, et al. at Microsoft in 1996 describes an advanced, broadly functional "merchant system" for the Web that dynamically generates Web pages, includes an order processing module as well as a database module. Notably, the system creates Web pages as needed with up-to-date communications such as "inventory data" and allows for updates (i.e. "communications control") via a Web

browser to information in the database(s) connected to the Web server(s). This system is a powerful eCommerce platform, powered by the Microsoft Merchant Server, and also provides the ability to connect with a database regardless of its schema and provides the flexibility to support all manner of database communication regarding retrieval of content to display on a Web page and the full breadth of functions necessary to allow for the sale of merchandise including inventory maintenance. Arnold Blinn also has been granted a related U.S. Patent bearing the number 5,897,622 (Exhibit 1038), filed on October 16, 1996 and published on April 27, 1999. To avoid confusion, when I refer “Blinn” in this declaration, I am referring to Exhibit 1025, U.S. Patent No. 6,058,373.

105. The DeLorme reference is a patent filed on February 6, 1997 and describes a hospitality sales system (TRIPS) focused on travel reservations that can function via a Web server connected to databases of travel information that allows for updates and point-of-sale functionality. The interface to TRIPs includes a database of maps that can be programmed to display elements as needed and can be accessed via the Internet.

106. The Flake reference is a patent by Wayne Flake, et al. at for Electronic Data Systems (EDS) in 1997 that describes an information system for automatically managing travel service information. Information such as customer

profiles and reservation services information are stored in a central, relational database and made available for simultaneous use and updating over a network. Automatic access to the database is provided upon request including inventory information relating to travel service and the generation and distribution of travel documents in response to a travel request (a type of travel service).

VII. Patentability Analysis of the '850 Patent

107. I have reviewed the claims of the '850 patent and compared those to the prior art known to me.

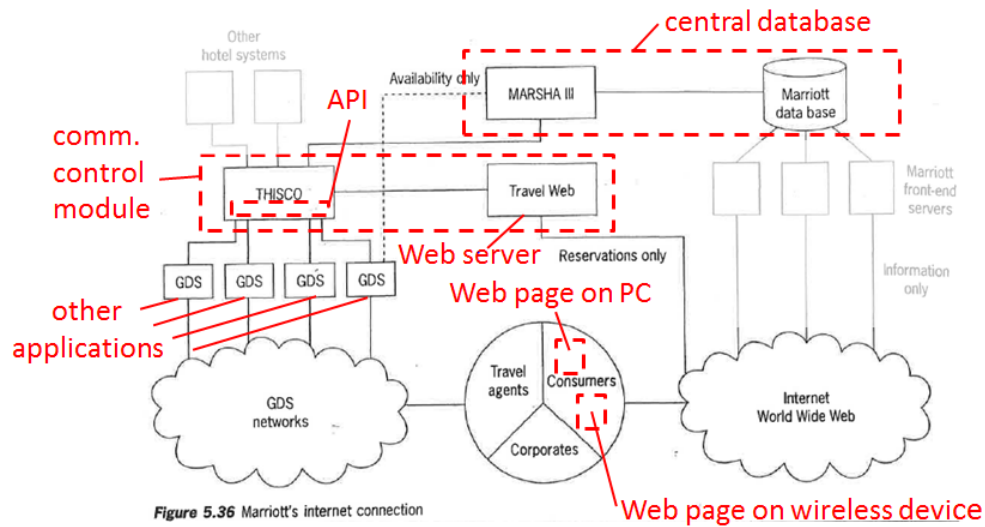
108. As detailed below, I believe claims 12-16 of the '850 patent would have been obvious to one of ordinary skill in the art as of the earliest possible priority date of the '850 patent on the grounds set forth below.

A. Obviousness of Claims 12-16 Based on Inkpen, Digestor and Nokia

109. It is my understanding that there are many legal bases under which two prior art references could be combined. It is my opinion that a person of ordinary skill in the art would have found it obvious to combine the system of Inkpen (Ex. 1021) with the techniques and environment of Digestor (Ex. 1022) and Nokia (Ex. 1023) because it would be combining use of known techniques to improve a similar device in the same way.

110. Inkpen teaches a book length survey of several known travel information systems. Although several such information systems are disclosed, for purposes of the Petition, the information system developed by Marriott will be the focus. The Marriott system serves as a system that handles hotel reservations over the internet through using a Travel Web server. The Travel Web server may be used by consumers to make reservations. *Id.* at 218, col.1, lines 35-40. In addition to the Travel Web server, a user may also connect to one of Marriott's front end servers to access the Marriott.com website, which were new as of 1996. *Id.* at 229, col. 2, lines 37-43. A user can get certain information via the Marriott.com website (*e.g.*, room rates, property descriptions, hotel addresses), but can only check availability and make reservations via a connection through the Marriott server to the Travel Web site to the THISCO switch and then to MARSHA. *Id.* at 230, col. 1, line 44- col. 2, line 49.

111. Inkpen maps on to the '850 patent as illustrated below:



112. Digestor teaches “a software system which automatically re-authors arbitrary documents from the world-wide web to display on small screen devices such as PDAs and cellular phones, providing device independent access to the web.” Ex. 1022 at Abstract. An example of a reauthored web document that has been divided to display as multiple cascaded screens on a small screen device is shown in Fig. 3 reproduced below:

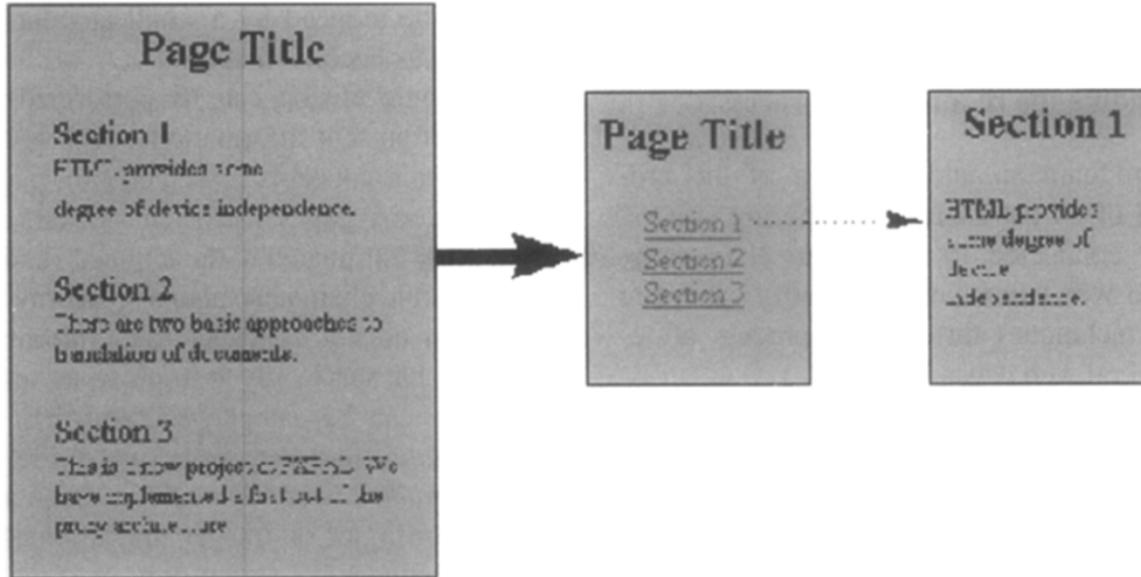


Fig. 3.

Digestor discloses four approaches for formatting documents for small screens, including: (1) device-specific authoring, (2) multiple-device authoring, (3) client-side navigation, and (4) automatic re-authoring. *Id.* at 1076. Automatic re-authoring can be performed at either the server, the client, or an intermediate device. *Id.*

113. Nokia discloses a web-capable mobile device. Nokia is an owner's manual for the Nokia 9000i Communicator. Ex. 1023 at 7. The Nokia 9000i Communicator, specifically mentioned in Digestor (Ex. 1022 at 1075), includes "a mobile phone, messaging device, Internet access terminal, and palmtop organizer all in one compact unit" with the phone interface on the device cover and the other interfaces under the device cover. The 9000i Communicator included a web

browser for viewing world wide web pages, including HTML web pages. *Id.* at 63.

114. In addition, wireless handheld devices that had wireless internet access and a web browser capable of rendering web pages include the Nokia 9000i Communicator, Samsung Duett, Sharp TQ-G700, Sharp MI-10, and the Novatel Contact. At the Critical Date of the Patents, there were a number of well-known, commercially available portable computing devices such as cellular phones, PDAs and handheld computers such as the Apple Newton MessagePad, SONY MagicLink, Windows CE devices from Compaq, Casio and NEC; various Palm Computing PDAs; as well as a number of devices from Nokia and Motorola. These devices all supported the use of Web browsers including such browser applications as NetHopper, MagicLink, Top Gun Wingman, and Microsoft Mobile Explorer. These handheld device browsers would be well-known to a POSITA and were being created, discussed and improved upon as early as 1994.

115. It is my opinion that it would have been obvious to a POSITA to combine Inkpen, Nokia and Digestor by using the Nokia 9000i Communicator device disclosed in Nokia to access Travel Web pages such as those disclosed in Inkpen to make, e.g., hotel reservations. It should be noted that claims 12-16 do not require any reformatting of any menus or other data for a smaller screen on a

wireless handheld device, do not require that the wireless handheld device utilize a hospitality application different from a Web page rendered by a browser and do not otherwise preclude the hospitality application on the wireless handheld device from being a Web page rendered by a browser. Thus, the “wireless handheld device” limitations of the Challenged Claims would be satisfied by a handheld device that had wireless internet access and a web browser capable of rendering the pages on the Travel Web site. Such devices include the Nokia 9000i Communicator (Ex. 1023 at 61) as well as Samsung Duett, Sharp TQ-G700 and Sharp MI-10 (Ex. 1022 at 1075), and the Novatel Contact (Ex. 1065 at 52). . It should further be noted that nothing in the claims of the ’850 patent preclude both the “web page” and the “wireless handheld device” from being implemented as wireless handheld devices with browsers, and this affects all grounds raised for patentability challenges.

116. Even if claims 12-16 were to be interpreted as requiring the reformatting of data for a small screen on a wireless handheld device, it would have been obvious to a POSITA to configure the Travel Web server of Inkpen to modify web pages for the smaller screen size of a wireless hand-held device such as the Nokia 9000i Communicator in view of Digestor. For example, as Digestor discloses (Ex. 1022) at 1076, col. 1, lines 6-9, a POSITA would have known that it

was possible to author Web pages for specific devices including the Nokia 9000i Communicator. Alternatively, a POSITA would have known how to employ Digester's automatic re-authoring techniques to transform a World Wide Web page for given display characteristics of a particular device such as the Nokia 9000i Communicator so that a Web page could be more appropriately displayed on that device.

117. The combination of Inkpen, Nokia and Digester renders each of claims 12-16 obvious as shown in the following detailed claims charts, in which the following mapping of claim limitations to blocks in diagram 5.36 of Inkpen will be made:

a. The "central database" of the claims is mapped onto the combination of MARSHA CRS and the Marriott database storage device. This is proper as the broadest reasonable interpretation of "database" includes not only data/records but routines to search, sort and recombine the data/records. Additionally, the '850 patent describes the central database as a "backoffice server" (Ex. 1001 at 2:24), and it is well known to a POSITA at the time of the '850 patent that a server includes both a computer and one or more storage devices, which can be as simple as a single hard

disk or as complex as a SAN (storage area network) including multiple interconnected storage devices.

b. The “communications control module” is mapped onto the THISCO switch.

c. The “outside applications” are mapped onto the GDSs.

d. The “application program interface” is mapped onto the code on the THISCO switch that translates the messages and commands in the various GDS protocols such as the TPF protocol to the format and protocol accepted by MARSHA.

e. The Web server is mapped onto the Travel Web server.

f. The Web page is an instance of a page from the Travel Web server rendered on any end user device such as a personal computer, laptop, PDA or smartphone.

118. Several variations to the system of figure 5.36 would have been obvious to a POSITA at the time of the alleged invention of claims 12-16. For example, it would have been obvious to a POSITA that the dotted line direct connection from one of the GDSs to the MARSHA CRS was optional and therefore could be omitted from the system of Figure 5.36. Alternatively, the one GDS that was directly connected to the MARSHA system could itself have been

omitted from the system of figure 5.36. Additionally, Inkpen discloses that the integration of the Marriott front end servers with the MARSHA system and Marriott database was relatively new. Ex. 1021 at 229, col. 2, lines 37-43. It would have been obvious to a POSITA that the Marriott front end servers could be eliminated from the system of figure 5.36 such that all internet transactions would originate from clients connected to the Travel Web server.

119. The “wireless handheld device” limitations of claim 12 would be satisfied by a handheld device that had wireless internet access and a web browser capable of rendering the pages on the Travel Web site. Such devices include the Nokia 9000i Communicator as well as Samsung Duett, Sharp TQ-G700 and Sharp MI-10.

120. It would have been obvious to a POSITA to configure the Travel Web server to modify web pages for the smaller screen size of a wireless hand-held device such as the Nokia 9000i Communicator in view of Digestor. For example, as disclosed Digestor at 1076, col. 1, lines 6-9, a POSITA would have known that it was possible to author World Wide Web pages for specific devices including the Nokia 9000i Communicator. Alternatively, a POSITA would have known how to employ Digestor’s automatic re-authoring techniques to transform a World Wide Web page for given display characteristics of a particular device such as the Nokia

9000i Communicator so that a Web page could be more appropriately displayed on that device. Ex. 1022 at 1076, Ex. 1021 at col. 2, ll. 28-42.

121. It is my opinion that a person of ordinary skill in the art would find that Inkpen in view of Nokia and Digester renders obvious each and every element of claims 12-16.

1. Claim 12

a. An information management and synchronous communications system for use with wireless handheld computing devices and the internet comprising

122. Inkpen discloses a communications system utilized by Marriott for hotel reservations which may be made via the Internet.

123. “Marriott has been highly successful in using technology to market and sell hotel rooms and related services to customers around the world. The cornerstone of this distribution activity is Marriott’s central reservation system, MARSHA (you can find more information on MARSHA in Marriott’s interconnection to GDSs in Chapter 3).... However, when an Internet user wishes to view availability or make a booking, the server routes the enquiry via a third route – a direct connection to TravelWeb. Messages passing down a direct connection to the TravelWeb Internet booking engine are routed to the Cisco switch, which passes them on to MARSHA. The MARSHA system checks its

room inventory data base and formulates a response, just as though it was a regular Thisco/TravelWeb reservation message. However, in this case the response is routed back to the Marriott Internet Web servers which route the message to the consumer.... The beauty of this approach is that it maintains the stand-alone integrity of Thisco and TravelWeb. Neither of these systems needs to hold a data base of rates or rooms. **All data and inventory records continue to be held by MARSHA. This is an important point because it eliminates any problems that would undoubtedly arise from duplicating Marriott's hotel information on other servers.** Another benefit is that it saves Marriott from having to develop a complex and costly booking interface to MARSHA.” Ex. 1021 at 229-231.

124. Additionally, Nokia and Digester disclose the use of wireless handheld devices for displaying world wide web pages. Ex 1022 at 1076; Ex. 1023 at pp. 61-65.

125. It would have been obvious to one of ordinary skill in the art that the Nokia 9000i Communicator and the wireless handheld devices disclosed in Digester could have been used to access the web pages of the Travel Web site.

- b. **a. a central database containing hospitality applications and data,**

126. The communications system utilized by Marriott for hotel reservations includes a central database containing hospitality applications and data including the MARSHA III computerized reservation system and the storage device associated with the MARSHA system.

127. “Marriott has been highly successful in using technology to market and sell hotel rooms and related services to customers around the world. The cornerstone of this distribution activity is **Marriott’s central reservation system**, MARSHA (you can find more information on MARSHA in Marriott’s interconnection to GDSs in Chapter 3).... However, when an Internet user wishes to view availability or make a booking, the server routes the enquiry via a third route – a direct connection to TravelWeb. Messages passing down a direct connection to the TravelWeb Internet booking engine are routed to the Cisco switch, which passes them on to MARSHA. The MARSHA system checks its **room inventory data base** and formulates a response, just as though it was a regular Cisco/TravelWeb reservation message. However, in this case the response is routed back to the Marriott Internet Web servers which route the message to the consumer.... The beauty of this approach is that it maintains the stand-alone integrity of Cisco and TravelWeb. Neither of these systems needs to hold a data base of rates or rooms. **All data and inventory records continue to**

be held by MARSHA. This is an important point because it eliminates any problems that would undoubtedly arise from duplicating Marriott's hotel information on other servers. Another benefit is that it saves Marriott from

having to develop a complex and costly booking interface to MARSHA.” Ex.

1021 at 229-231.

c. b. at least one wireless handheld computing device on which hospitality applications and data are stored,

128. The Nokia 9000i Communicator discloses a wireless handheld computing device with a web browser. Ex. 1023 at pp. 61-65.

129. Digester discloses wireless handheld devices such as the Nokia 9000i cell phone, the Sony MagicLink, the Apple Newton with the AllPen NetHopper browser, and the Sharp MI-10.

130. It would have been obvious to a POSITA to configure the Travel Web server to modify web pages for the smaller screen size of a wireless hand-held device in view of Digester. A POSITA would understand that Travel Web pages being rendered by a browser on a handheld device are data and hospitality applications within the meaning of the '850 patent. This is because the combination of the HTML files associated with the Travel Web pages and the browser together comprise “sequences of instructions that can be executed on a computer that are designed to help people perform a certain type of work,” in this

case making reservations. Additionally, a POSITA would understand that web pages such as the Travel Web pages include data, and the requirement in claim 12 that the Web page have hospitality applications and data stored thereon further supports the conclusion that Travel Web pages being rendered by a browser on a handheld device are data and hospitality applications.

d. c. at least one Web server on which hospitality applications and data are stored,

131. The communications system utilized by Marriott for hotel reservations includes a Travel Web server on which hospitality applications and data are stored.

132. “The TravelWeb Internet server is linked by high speed telecommunications lines to Thisco’s Ultraswitch computer (see Pegasus in Chapter 4 for more details on this major hotel industry switch). It is through this link that consumers can book a hotel room from 14,000 properties that are part of 16 chains. The actual booking process is carried out between the consumer and the hotel chain’s computer system, with no intermediate GDS involved at all. This seamless connectivity is about as close to a direct point-of-sale relationship with a prospective guest that a hotel could reasonably expect to achieve. Once a booking has been made, consumers may choose to guarantee their rooms by using TravelWeb’s on-line plastic card authorization facility. TravelWeb therefore

provides its participating hotel customers with a truly on-line confirmed booking service that is available to customers all around the world.” Ex. 1021 at 218-19.

133. “One of the other main functions of the **TravelWeb server** is to act as a translator between: (a) classical text-based computer systems that support TravelWeb’s host suppliers; and (b) the Internet’s HTML to which all Internet users are connected. **This translation function allows TravelWeb’s host suppliers to communicate directly with the PCs of home and business consumers around the world.**” Ex. 1021 at 218.

134. Digester discloses a server that automatically re-authors documents for display on small screen devices. Ex. 1022 at 1076.

135. A POSITA would have understood that the Travel Web server pages are hospitality applications and data for the reasons discussed above in connection with claim element 12.b discussed above.

e. d. at least one Web page on which hospitality applications and data are stored,

136. The communications system utilized by Marriott for hotel reservations includes consumer devices such as PCs (personal computers) on which hospitality applications and data in the form of Travel Web pages rendered by a browser are stored.

137. “One of the other main functions of the **TravelWeb server** is to act as a translator between: (a) classical text-based computer systems that support TravelWeb’s host suppliers; and (b) the Internet’s HTML to which all Internet users are connected. **This translation function allows TravelWeb’s host suppliers to communicate directly with the PCs of home and business consumers around the world.**” Ex. 1021 at 218.

138. A POSITA would have understood that Travel Web pages being rendered by a browser on a handheld device are data and hospitality applications within the meaning of the ’850 patent for the reasons discussed above in connection with claim element 12.b. above at ¶¶ 89-91.

f. e. an application program interface, and

139. The communications system utilized by Marriott for hotel reservations includes a THISCO switch. Ex. 1021 at Fig. 5.36. The THISCO switch includes an API for communicating with other applications: “On the demand side, the THISCO switch communicates with all major GDSs using the proprietary message format of each one.” Ex. 1021 at 264, col. 1, ll. 15-18.

140. A POSITA would have considered the software in the THISCO switch that communicates with all major GDSs using their proprietary message formats to constitute or include an application program interface for interfacing with the GDSs.

g. f. a communications control module,

141. The communications system utilized by Marriott for hotel reservations includes a THISCO switch. Ex. 1021 at Fig. 5.36. The THISCO switch is also referred to as Ultraswitch.

142. “The required solution would support the development of a single interface linking each hotel system to the common switch. On the distribution side of the switch, a standard GDS link would be developed that could be shared by all hotel participants. Thisco was formed in 1988 when 15 major hotel companies, including Utell International, Hyatt, Forte, Marriott, as well as most other leading hotel companies in the USA together with Murdoch Electronic Publishing (which later became Reed Travel Group), agreed to invest in a hotel industry switching company.” Ex. 1021 at 163-164.

143. “The newly formed Thisco developed a computerized switch called Ultraswitch. The way this switch works is very much like a transparent link between the travel agent and the participating hotel. The switch has a supply and demand side. On the supply side, it connects to hotel inventory systems and translates their messages and commands into a standard Thisco format that is used for all processing within Ultraswitch. On the demand side, the Thisco switch communicates with all major GDSs using the proprietary message format of each one. In many ways the Ultraswitch computer acts as a sort of super-translator

between the various hotel systems and the major GDSs. It provides full support for all GDS hotel functionality, including bookings, status messages, rate updates and seamless availability.” Ex. 1021 at 164.

144. **“Ultraswitch** uses technology based on a scalable client/server computer running the UNIX operation system and a relational data base management system (RDMS). It uses high speed digital data circuits carrying between 56 and 64 kb/s of data and supports many different telecommunications protocols including SNA, X25, SLC and TCP/IP.” Ex. 1021 at 164.

145. “Once the travel agent has selected a property for a customer, stage two commences. This involves the creation of a booking request entry by the travel agent, using the GDS terminal. The resulting reservations message is transmitted from the GDS, via the **“Ultraswitch”** to the hotel system. When the reservation message is received by the hotel system, it checks the required availability and sends a response back to the travel agent via the **“Ultraswitch”** and the GDS. This two-way message flow continues until either a booking is made or the travel agent sign-off, i.e. the transaction is ended.” Ex. 1021 at 164.

146. “The primary role of TravelWeb is to provide the technologically sophisticated traveller with a full-scale travel service via the Internet. Hotel bookings are serviced on a one-to-one basis with the consumer using **“Thisco’s”**

Ultraswitch technology to link him/her directly to the hotel system of his/her choice. Airline ticket sales are fulfilled with the participation of a USA based travel agent.” Ex. 1021 at 216.

147. “TravelWeb first appeared on the Internet in October 1994 when it was positioned as an online catalogue of hotel products aimed at the travel industry. In December 1995 a pilot version of the hotel booking engine was Beta tested by a controlled group of Internet users. This was the first time that **Thisco’s Ultraswitch hotel booking system** had been connected to the Internet.” Ex. 1021 at 216.

148. “**The hotel booking engine** The TravelWeb Internet server is linked by high speed telecommunications lines to **Thisco’s ultraswitch computer** (see Pegasus and Chapter 4 for more details on this major hotel industry switch). It is through this link that consumers can book a hotel room from 14,000 properties that are part of 16 chains. The actual booking process is carried out between the consumer and the hotel chain’s computer system, with no intermediate GDS involved at all. This seamless connectivity is about as close to a direct point-of-sale relationship with a prospective guest that a hotel could reasonably expect to achieve. Once a booking has been made, consumers may choose to guarantee their rooms by using TravelWeb’s on-line plastic card authorization facility. TravelWeb

therefore provides its participating hotel customers with a truly on-line confirmed booking service that is available to customers all around the world.” Ex. 1021 at 218-219.

149. “The Cisco switch (which is explained in more detail in Chapter 4 in the section on distribution systems), was designed with an in-built capability to handle both TPF links to hotel systems and, via its Travel Web booking engine, TCP/IP for Internet traffic.” Ex. 1021 at 230.

150. Nothing in claim 12 requires the communications module to be comprised of a single physical device. In any event, although CISCO chose to implement the Ultraswitch and the Travel Web server as separate devices connected by high speed communications lines, it would have been obvious to a POSITA at the time of the '850 patent that this was a design choice and that the Ultraswitch and the Travel Web server could have been implemented as a single device. A POSITA would have been motivated to do so in order to avoid the cost and complexity of the high-speed phone lines that linked the Ultraswitch and the Travel Web server. Additionally, the final citation in chart above from Inkpen at 230 suggests to a POSITA implementation of the CISCO Ultraswitch and Travel Web server as a single system.

- h. 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;**

151. In the communications system utilized by Marriott for hotel reservations, reservations information is maintained in the MARSHA system and distributed to Web pages on PCs or handheld devices.

152. “Marriott has been highly successful in using technology to market and sell hotel rooms and related services to customers around the world. The cornerstone of this distribution activity is Marriott’s central reservation system, MARSHA (you can find more information on MARSHA in Marriott’s interconnection to GDSs in Chapter 3).... However, when an Internet user wishes to view availability or make a booking, the server routes the enquiry via a third route – a direct connection to TravelWeb. Messages passing down a direct connection to the TravelWeb Internet booking engine are routed to the Cisco switch, which passes them on to MARSHA. The MARSHA system checks its room inventory data base and formulates a response, just as though it was a regular Cisco/TravelWeb reservation message. However, in this case the response is routed back to the Marriott Internet Web servers which route the message to the consumer.... The beauty of this approach is that it maintains the stand-alone integrity of Cisco and TravelWeb. Neither of these systems needs to

hold a data base of rates or rooms. **All data and inventory records continue to be held by MARSHA. This is an important point because it eliminates any problems that would undoubtedly arise from duplicating Marriott's hotel information on other servers.** Another benefit is that it saves Marriott from having to develop a complex and costly booking interface to MARSHA.” Ex. 1021 at 229-231.

153. It would have been obvious to a POSITA that when a PC and a wireless handheld device are both connected to the Travel Web server and viewing pages for the same hotel property, the reservations data maintained on MARSHA would be synchronized (as that term is properly construed) between MARSHA, the Travel Web server, and the Travel Web pages rendered on PCs and the wireless handheld devices such as the Nokia 9000i.

i. wherein the application program interface enables integration of outside applications with the hospitality applications and

154. The THISCO switch includes an API for communicating with other applications: “On the demand side, the THISCO switch communicates with all major GDSs using the proprietary message format of each one.” Ex. 1021 at 264, col. 1, ll. 15-18.

155. The software in the Thisco switch that accepts messages from the major GDSs in their respective proprietary message formats is an applications

program interfaces (i.e., integrate with the application programs running on the respective GDSs). The API enables integration of the outside applications with the hospitality applications in that the API allows the other applications to make room reservations via the MARSHA system and such reservations will be reflected in MARSHA as well as on the Travel Web server and Web pages downloaded to customer PCs and wireless handheld devices.

j. wherein the communications control module is an interface between the hospitality applications and any other communications protocol.

156. In the communications system utilized by Marriott for hotel reservations, the Travel Web internet booking engine of the THISCO switch is an interface between the TCP/IP protocol employed by the hospitality applications on the Travel Web server, the Web page on the PC and the wireless handheld devices and the protocol employed by the MARSHA CRS.

157. "Its MARSHA system is based on operating software called transaction processing facility (TPF), which runs on an IBM mainframe. This is totally incompatible with the TCP/IP communications protocols used by the Internet.... To build its own Internet booking engine with an on-line interface to MARSHA could be done from a technical viewpoint, however, it would be quite costly.... So, in the meantime, what was the answer to Marriott's Internet book problem? Well, the answer was a very pragmatic decision taken by Marriott

management, which was to use the Cisco hotel switch as the interface to MARSHA. The Cisco switch (which is explained in more detail in Chapter 4 in the section on distribution systems), was designed with an in-built capability to handle both TPF links to hotel systems and, via its Travel Web booking engine, TCP/IP for Internet traffic.” Ex. 1021 at 230.

2. Claim 13

a. The information management and synchronous communications system of claim 12

158. See the disclosures and related commentary to claim 12 discussed above as discussing the information management and synchronous communications system from claim 12.

b. wherein the communications control module provides a single point of entry for all hospitality applications and

159. Inkpen discloses “[t]he Cisco switch (which is explained in more detail in Chapter 4 in the section on distribution systems), was designed with an in-built capability to handle both TPF links to hotel systems and, via its Travel Web booking engine, TCP/IP for Internet traffic.” Ex. 1021 at 230, col. 2, ll. 18-23.

c. 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.

160. In the communications system utilized by Marriott for hotel reservations, reservations information is maintained in the MARSHA system and distributed to Web pages on PCs or handheld devices. This discloses 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.

161. “Marriott has been highly successful in using technology to market and sell hotel rooms and related services to customers around the world. The cornerstone of this distribution activity is **Marriott’s central reservation system**, MARSHA (you can find more information on MARSHA in Marriott’s interconnection to GDSs in Chapter 3).... However, when an Internet user wishes to view availability or make a booking, the server routes the enquiry via a third route – a direct connection to TravelWeb. Messages passing down a direct connection to the TravelWeb Internet booking engine are routed to the Cisco switch, which passes them on to MARSHA. The MARSHA system checks its **room inventory data base** and formulates a response, just as though it was a regular Cisco/TravelWeb reservation message. However, in this case the response is routed back to the Marriott Internet Web servers which route the

message to the consumer.... The beauty of this approach is that it maintains the stand-alone integrity of Thisco and TravelWeb. Neither of these systems needs to hold a data base of rates or rooms. **All data and inventory records continue to be held by MARSHA. This is an important point because it eliminates any problems that would undoubtedly arise from duplicating Marriott's hotel information on other servers.** Another benefit is that it saves Marriott from having to develop a complex and costly booking interface to MARSHA.” Ex. 1021 at 229-231.

162. Additionally, it would have been obvious to a POSITA that when a PC and a wireless handheld device are both connected to the Travel Web server and viewing pages for the same hotel property, the reservations data maintained on MARSHA would be synchronized (as that term is properly construed) between MARSHA, the Travel Web server, and the Travel Web pages rendered on PCs and the wireless handheld devices such as the Nokia 9000i.

3. Claim 14

a. The information management and synchronous communications system of claim 13.

163. See the disclosures and related commentary to claim 13 discussed above as discussing the information management and synchronous communications system from claim 13.

- b. wherein 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.**

164. In the communications system utilized by Marriott for hotel reservations, reservations information is maintained in the MARSHA system and distributed to Web pages on PCs or handheld devices. This discloses 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 and therefore synchronized.

165. “Marriott has been highly successful in using technology to market and sell hotel rooms and related services to customers around the world. The cornerstone of this distribution activity is Marriott’s central reservation system, MARSHA (you can find more information on MARSHA in Marriott’s interconnection to GDSs in Chapter 3).... However, when an Internet user wishes to view availability or make a booking, the server routes the enquiry via a third route – a direct connection to TravelWeb. Messages passing down a direct connection to the TravelWeb Internet booking engine are routed to the Cisco switch, which passes them on to MARSHA. The MARSHA system checks its room inventory data base and formulates a response, just as though it was a

regular Thisco/TravelWeb reservation message. However, in this case the response is routed back to the Marriott Internet Web servers which route the message to the consumer.... The beauty of this approach is that it maintains the stand-alone integrity of Thisco and TravelWeb. Neither of these systems needs to hold a data base of rates or rooms. **All data and inventory records continue to be held by MARSHA. This is an important point because it eliminates any problems that would undoubtedly arise from duplicating Marriott's hotel information on other servers.** Another benefit is that it saves Marriott from having to develop a complex and costly booking interface to MARSHA.” Ex. 1021 at 229-231.

166. Additionally, it would have been obvious to a POSITA that when a PC and a wireless handheld device are both connected to the Travel Web server and viewing pages for the same hotel property, the reservations data maintained on MARSHA would be synchronized (as that term is properly construed) between MARSHA, the Travel Web server, and the Travel Web pages rendered on PCs and the wireless handheld devices such as the Nokia 9000i.

167. Because the MARSHA CRS maintains all data and inventory records in a central database, it would have been obvious to one of ordinary skill in the art that information entered on a Travel Web page on a user's PC, for example a

reservation of a last vacant room of a particular type or category, would automatically be entered into the MARSHA CRS database and would automatically be reflected (*e.g.*, in the form of a “sold out” indication) in future downloads of Web pages for that property, including Web pages downloaded to wireless handheld devices.

168. Additionally, the Web page of claim 14 could be a Travel Web page for room reservations being rendered on a wireless handheld device. In that instance, it would have been obvious to one of ordinary skill in the art that information pertinent to a reservation entered on a Travel Web page (*e.g.*, the user’s name, dates of a room reservation, etc.) would be automatically communicated to the MARSHA CRS and a confirmation/checkout Web page including the same information would be automatically sent back to the wireless handheld device on which reservations page had been rendered. Such confirmation/checkout pages were widely well known in the art at the time of the ’850 patent.

4. Claim 15.

a. The information management and synchronous communications system of claim 13

169. See the disclosures and related commentary to claim 13 discussed above as discussing the information management and synchronous communications system from claim 13.

- b. wherein information entered on at least one wireless handheld computing device is automatically communicated to the central database and at least one Web page.**

170. In the communications system utilized by Marriott for hotel reservations, reservations information is maintained in the MARSHA system and distributed to Web pages on PCs or handheld devices. This discloses 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.

171. “Marriott has been highly successful in using technology to market and sell hotel rooms and related services to customers around the world. The cornerstone of this distribution activity is Marriott’s central reservation system, MARSHA (you can find more information on MARSHA in Marriott’s interconnection to GDSs in Chapter 3).... However, when an Internet user wishes to view availability or make a booking, the server routes the enquiry via a third route – a direct connection to TravelWeb. Messages passing down a direct

connection to the TravelWeb Internet booking engine are routed to the Cisco switch, which passes them on to MARSHA. The MARSHA system checks its **room inventory data base** and formulates a response, just as though it was a regular Cisco/TravelWeb reservation message. However, in this case the response is routed back to the Marriott Internet Web servers which route the message to the consumer.... The beauty of this approach is that it maintains the stand-alone integrity of Cisco and TravelWeb. Neither of these systems needs to hold a data base of rates or rooms. **All data and inventory records continue to be held by MARSHA. This is an important point because it eliminates any problems that would undoubtedly arise from duplicating Marriott's hotel information on other servers.** Another benefit is that it saves Marriott from having to develop a complex and costly booking interface to MARSHA.” Ex. 1021 at 229-231.

172. Additionally, it would have been obvious to a POSITA that when a PC and a wireless handheld device are both connected to the Travel Web server and viewing pages for the same hotel property, the reservations data maintained on MARSHA would be synchronized (as that term is properly construed) between MARSHA, the Travel Web server, and the Travel Web pages rendered on PCs and the wireless handheld devices such as the Nokia 9000i.

173. Because the MARSHA CRS maintains all data and inventory records in a central database, it would have been obvious to one of ordinary skill in the art that information entered on a Travel Web page via a wireless handheld device, for example a reservation of a last vacant room of a particular type or category, would automatically be entered into the MARSHA CRS database and would automatically be reflected (*e.g.*, in the form of a “sold out” indication) in future downloads of Web pages for that property, including Web pages downloaded to a user’s PC.

174. Additionally, the Web page of claim 15 could be a Travel Web page for room reservations being rendered on a wireless handheld device. In that instance, it would have been obvious to one of ordinary skill in the art that information pertinent to a reservation entered on a Travel Web page (*e.g.*, the user’s name, dates of a room reservation, etc.) would be automatically communicated to the MARSHA CRS and a confirmation/checkout Web page including the same information would be automatically sent back as a Web page to the wireless handheld device on which reservation had been made. Such confirmation/checkout pages were widely well known in the art at the time of the ’850 patent.

5. Claim 16.

a. The information management and synchronous communications system of claim 12

175. See the disclosures and related commentary to claim 12 discussed above as discussing the information management and synchronous communications system from claim 12.

b. wherein 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.

176. In the communications system utilized by Marriott for hotel reservations, reservations information is maintained in the MARSHA system and distributed to Web pages on PCs or handheld devices.

177. “Marriott has been highly successful in using technology to market and sell hotel rooms and related services to customers around the world. The cornerstone of this distribution activity is Marriott’s central reservation system, MARSHA (you can find more information on MARSHA in Marriott’s interconnection to GDSs in Chapter 3).... However, when an Internet user wishes to view availability or make a booking, the server routes the enquiry via a third route – a direct connection to TravelWeb. Messages passing down a direct connection to the TravelWeb Internet booking engine are routed to the Cisco

switch, which passes them on to MARSHA. The MARSHA system checks its **room inventory data base** and formulates a response, just as though it was a regular Thisco/TravelWeb reservation message. However, in this case the response is routed back to the Marriott Internet Web servers which route the message to the consumer.... The beauty of this approach is that it maintains the stand-alone integrity of Thisco and TravelWeb. Neither of these systems needs to hold a data base of rates or rooms. **All data and inventory records continue to be held by MARSHA. This is an important point because it eliminates any problems that would undoubtedly arise from duplicating Marriott's hotel information on other servers.** Another benefit is that it saves Marriott from having to develop a complex and costly booking interface to MARSHA.” Ex. 1021 at 229-231.

178. It would have been obvious to a POSITA that when a PC and a wireless handheld device are both connected to the Travel Web server and viewing pages for the same hotel property, the reservations data maintained on MARSHA would be synchronized (as that term is properly construed) between MARSHA, the Travel Web server, and the Travel Web pages rendered on PCs and the wireless handheld devices such as the Nokia 9000i.

179. The communications between the MARSHA CRS, the wireless handheld device, the Web server and the Web page are inherently digital. For example, Web servers and Web pages communicate using TCP/IP, which is a digital protocol. Furthermore, digital cellular communications were known at the time. Ex. 1001 at 1:29-32. In any event, it would have been obvious to one of ordinary skill in the art that data transmissions of claim 12 would be digital data transmissions.

B. Obviousness of Claims 12-16 Based on DeLorme

180. DeLorme teaches a system for making travel arrangements and planning travel activities, called Travel Reservation and Information Planning Systems, or TRIPS. *See, e.g.* Ex. 1024 at 1:28-36; 14:24-42. The TRIPS system is a “completely integrated system enabling an individual to plan, review, locate, schedule and select or execute customized or personalized travel arrangements and activities in association with map displays or other output of travel routes, chronological events, diverse travel topics and geographic points of interests along such routes.” Ex. 1024 at 1:32-43.

181. In the TRIPS system, travel and planning related data and information are stored in a centralized relational database. *Id.* at 17:7:13; *see also* 32:1-7. The TRIPS system can be accessed by users using a variety of different types of devices using various communications protocols. For example, DeLorme discloses

that the TRIPS system may be accessed “entirely online” by means of an Internet web site. *Id.* at 14:43-47. Alternatively, the TRIPS system may be accessed by users “on the go” using wireless communication units, such as wireless handheld devices. *Id.* at 72:13-19; 71:61-72:2. DeLorme discloses that whether the user accesses the system online or via a wireless handheld device, the user can access updated (*i.e.*, synchronized) “real time” or “on the spot” travel information. *Id.* at 14:24-42; 72:37-43.

182. It is my opinion that it would have been obvious to a person of ordinary skill in the art to include the elements of claims 12-16 not necessarily explicitly disclosed in DeLorme. Such methods are well within the grasp of a programmer and would easily be recognized as ways to implement such a system.

183. It is my opinion that DeLorme renders obvious claims 12-16.

1. Claim 12

a. An information management and synchronous communications system for use with wireless handheld computing devices and the internet comprising:

184. DeLorme discloses an information management and synchronous communications system for making travel arrangements and planning travel activities, called Travel Reservation and Information Planning Systems, or TRIPS. *See, e.g.* Ex. 1024 at 1:28-36; 14:24-42.

185. DeLorme discloses that users may interact with updated TRIPS data using the internet or a wireless handheld computing device.

186. “Alternatively, all TRIPS functions, data and services can be provided entirely online (i.e. without significant stand-alone software components)—for example, from a central TRIPS service bureau, **or by means of a TRIPS Internet World Wide Web Site.** *Id.* at 14:43-47.

187. “FIG. 9 illustrates an important alternative or additional embodiment of TRIPS—that permits mobile users 901, at remote locations (for example, en route in vehicles or on foot), two-way access by wireless communications 903 to engage the novel travel reservation information planning system of one or more TRIPS 904 communications facilities or service bureaus. FIG. 9 includes **a wireless communication unit or WCU 907, typically hand-held 906** or mounted or used in a vehicle 905 like an automobile.” *Id.* at 71:61-72:2.

b. a. a central database containing hospitality applications and data,

188. DeLorme discloses a relational database for storing TRIPS hospitality data.

189. “Preferred TRIPS embodiments respond with interactive processing to these "user friendly" travel planning inquiries by sets of operations or sequences of functions which retrieve, focus, and integrate characteristic travel information

within TRIPS Subsystems for processing geographical, topical, temporal and accounting data records organized as a **state-of-the-art relational database.**” Ex. 1024 at 17:7:13; *see also* 32:1-7.

190. DeLorme further discloses that the TRIPS database includes hospitality applications, such as software for managing hospitality data in the TRIPS database: “FIG. 3 is a simplified representation of the preferred data structure for storage, retrieval and processing of the characteristic species TRIPS travel information—i.e. for the **software management of geographic, temporal, topical and/or transactional records in TRIPS.**” *Id.* at 30:58-65; *see also* 8:23-32 (describing GIS applications).

c. b. at least one wireless handheld computing device on which hospitality applications and data are stored,

191. DeLorme discloses a handheld wireless communication unit (WCU) 907 for accessing TRIPS hospitality data and applications.

192. “FIG. 9 illustrates an important alternative or additional embodiment of TRIPS—that permits mobile users 901... to engage the novel travel reservation information planning system of one or more TRIPS 904 communications facilities or service bureaus. FIG. 9 includes **a wireless communication unit or WCU 907, typically hand-held 906** or mounted or used in a vehicle 905 like an automobile.” Ex. 1024 at 71:61-72:2.

193. “TRIPS WCUs 907 facilitate two way communications at 903 of standard TRIPS data packets 939 with at least one TRIPS travel information and service 15 provider 904. In sum, FIG. 9 outlines embodiments of the TRIPS invention **enabling users to get travel information and/or make travel arrangements "on the go"**, walking in a city, from their vehicle, during an off-road expedition and so forth.” *Id.* at 72:13-19; *see also id.* at 18:35-42.

d. c. at least one Web server on which hospitality applications and data are stored,

194. DeLorme discloses TRIPS data and applications available online via a World Wide Web Site.

195. “Alternatively, all TRIPS function, data and service can be provided entirely online_(i.e. without significant standalone software components)—for example, from a central TRIPS service bureau, or by means of a **TRIPS Internet World Wide Web Site**.” Ex. 1024 at 14:43-47.

196. “Preferred online TRIPS embodiments—such as **an Internet travel reservation information planning system**—are designed to facilitate flexible and independent user consideration and manipulation of travel information in association with dates/times in order to construct and/or modify personalized itineraries or travel schedules....” *Id.* at 51:13-22.

e. d. at least one Web page on which hospitality applications and data are stored,

197. DeLorme discloses TRIPS data and applications available online via a World Wide Web Site.

198. “Alternatively, all TRIPS function, data and service can be provided entirely online_(i.e. without significant standalone software components)—for example, from a central TRIPS service bureau, or by means of a **TRIPS Internet World Wide Web Site.**” Ex. 1024 14:43-47.

199. DeLorme further discloses using distributed applications, such as Java “applets,” on Web pages to provide TRIPS hospitality functionality: “Such purely online TRIPS embodiments can be implemented utilizing recent advances in **distributed applications, "agents" or online "applets" developed in Java, or equivalent computer languages—plus other state-of-the-art software enhancements for online or Internet usage.**” *Id.* at 14:47-52.

f. e. an application program interface, and

200. DeLorme discloses an application program interface through its disclosure of Provider Input/Output 231 for integrating third party applications with TRIPS.

201. “Preferably, **TRIPS 203 further offers/brokers Provider Input/Output 231 to and from third-party providers of travel information and services – optimally in real time online.** Such third party participation online

enables enrolled TRIPS users to enjoy more immediate offerings, such as updated

information on accommodations availability i.e. vacancies, special offers for price discounts or extra services, reservations and/or tickets for diverse accommodations or events and so forth – as described in more detail hereinafter, particularly referring to FIG. 8.” Ex. 1024 at 31:42-51.

202. DeLorme further discloses the Accounting Subsystem as comprising software and communication links for integrating accounting, billing and other services: “These transactions are negotiated, consummated, recorded, confirmed, accounted for, and as appropriate, charged, invoiced and/or reconciled within the TRANSACTION COMMUNICATIONS ACCOUNTING MANAGER block—at 816 in FIG. 8A—by means of state-of-the-art **software and communication links for electronic commerce or online contracts, related accounting, billing, or customer services**, and so forth.” *Id.* at 64:37-44; *see also id.* at 63:61-67; 50:45-48.

g. f. a communications control module,

203. DeLorme discloses a communications control module in its disclosure that the TRIPS system communicates with different end-user devices using different communication protocols.

204. “**TRIPS can also work with alternative end-user hardware platforms**; e.g., networked work stations; "kiosk" information terminals linked to a central server; portable laptop, notebook, in-vehicle, or handheld personal digital

assistant (PDA) portable computer devices... TRIPS can also be provided via "smart Cable TV" interfaces that combine simplified PC functionality, input/output with a mass-market "home" television appliance....” Ex. 1024 at 14:66-15:13.

205. “For convenient use en route, e.g., in a vehicle or on foot, the WCU 907 preferably provides simplified or "push-button" input means at 914, 915, 916, 918 and 920, for example to make TRIPS inquiries from a moving car, as described hereinafter.... The TRIPS service bureau or provider 904 in FIG. 9 receives the simplified input or remote queries, which get processed by series or sequences of TRIPS geographic, temporal, topical and accounting operations....” *Id.* at 73:26-45; *see also* 73:64-74:29.

206. DeLorme further discloses a communication control module (*i.e.* Interface and Interaction Bus 209 in Fig. 2 or Main Menu 413 and Interaction Bus 414 in Fig. 4) that coordinates communication with different end-user devices: “A TRIPS Retail Consumer Input is shown at 205 in FIG. 2. Retail user input 205 includes travel planning inquiries.... The TRIPS Interface & Interaction Bus 209 functions to furnish flexible user-directed access to, from and among the four Subsystems at 221, 223, 213 and 217 within TRIPS 203.” *Id.* at 30:67-31:22; *see also* 22:63-66; Fig. 2.

207. “A TRIPS Retail Consumer Input is shown at 205 in FIG. 2. Retail user input 205 includes travel planning inquiries.... **The TRIPS Interface & Interaction Bus 209 functions to furnish flexible user-directed access to, from and among the four Subsystems at 221, 223, 213 and 217 within TRIPS 203.**”

Id. at 30:67-31:22; *see also* 22:63-66; Fig. 2.

208. “In FIG. 4, **the Main Menu 413 and the Interaction Bus 414 correspond to the TRIPS Interface & Interaction Bus 209 in FIG. 2**—as well as the main input menus at 155, 157, 161 and 163 in FIG. 1C—plus equivalent input means like graphical user interfaces (GUIs). Moreover, the Main Menu 413 and **Interaction Bus 414 in FIG. 4** correspond to, and **coordinate the response to, alternative input means** embedded in specialized TRIPS field or in-vehicle embodiments that typically include the wireless communication of GPS position sensor data along with simplified, "push-button" travel information inquiries sent by users actually en route or at remote locations....” *Id.* at 37:54-67.

209. A POSITA would understand that that the communication control module (*i.e.* Interface and Interaction Bus 209 in Fig. 2 or Main Menu 413 and Interaction Bus 414) serves as an interface between retail consumer users (e.g. 205 in Fig. 2) and the various subsystems that comprise TRIPS (e.g. Topical Subsystem 213, Accounting Subsystem 217, Geographic Subsystem 221, and Temporal

Subsystem 223). A POSITA would further understand that the communication control module is configured to interface with retail consumer users using different types of devices using different communication protocols, including both Internet based access (14:66-15:13) as well as access via a “simplified” request protocol from wireless communication devices (73:26-45; 73:67-74:29).

h. 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;

210. DeLorme discloses that users may view updated real-time TRIPS data via the internet site.

211. “Once online, the preferred embodiment lets the user "view" or download updated TRIPS map data, functions and timely, topical travel information.... When needed, TRIPS user inquiries can be processed online or via computer communications for immediate treatment and response. In sum, the FIG. 1A preferred embodiment facilitates access to current information and "real-time" services online....” Ex. 1024 at 14:24-42. *See also* 14:43-47.

212. DeLorme further discloses providing updated TRIPS data to wireless communication units: “FIG. 9 also depicts alternative TRIPS embodiments and remote usage scenarios which facilitate "on the spot" simplified travel planning and transactions, via WCU 907 from remote locations, by retail users actually en

route, who have not necessarily engaged in previous desktop TRIPS travel planning sessions, arrangements, output or transfers specifically related to their current trip.... **In other words, FIG. 9 illustrates TRIPS embodiments for immediate travel inquiries and responses to and from TRIPS retail users "on the road" or at remote "field" locations.**” *Id.* at 72:37-43; 72:67-73:6.

- i. **wherein the application program interface enables integration of outside applications with the hospitality applications and**

213. DeLorme discloses Provider Input/Output 231 for integrating third party applications with TRIPS hospitality applications: “Preferably, **TRIPS 203 further offers/brokers Provider Input/Output 231 to and from third-party providers of travel information and services – optimally in real time online.**

Such third party participation online enables enrolled TRIPS users to enjoy more immediate offerings, such as updated information on accommodations availability i.e. vacancies, special offers for price discounts or extra services, reservations and/or tickets for diverse accommodations or events and so forth – as described in more detail hereinafter, particularly referring to FIG. 8.” Ex. 1024 at 31:42-51.

- j. **wherein the communications control module is an interface between the hospitality applications and any other communications protocol.**

214. DeLorme discloses that the TRIPS system communicates with different end-user devices using different communication protocols: “**TRIPS can**

also work with alternative end-user hardware platforms; e.g., networked work stations; "kiosk" information terminals linked to a central server; portable laptop, notebook, in-vehicle, or handheld personal digital assistant (PDA) portable computer devices... TRIPS can also be provided via "smart Cable TV" interfaces that combine simplified PC functionality, input/output with a mass-market "home" television appliance....” Ex. 1024 at 14:66-15:13.

215. “For convenient use en route, e.g., in a vehicle or on foot, the **WCU 907 preferably provides simplified or "push-button" input means** at 914, 915, 916, 918 and 920, for example to make TRIPS inquiries from a moving car, as described hereinafter.... **The TRIPS service bureau or provider 904 in FIG. 9 receives the simplified input or remote queries**, which get processed by series or sequences of TRIPS geographic, temporal, topical and accounting operations....” *Id.* at 73:26-45; *see also* 73:64-74:29.

216. DeLorme further discloses a communication control module (*i.e.* Interface and Interaction Bus 209 in Fig. 2 or Main Menu 413 and Interaction Bus 414 in Fig. 4) that coordinates communication with different end-user devices: “A TRIPS Retail Consumer Input is shown at 205 in FIG. 2. Retail user input 205 includes travel planning inquiries... **The TRIPS Interface & Interaction Bus 209 functions to furnish flexible user-directed access to, from and among the**

four Subsystems at 221, 223, 213 and 217 within TRIPS 203.” *Id.* at 30:67-

31:22; *see also* 22:63-66; Fig. 2.

217. “In FIG. 4, **the Main Menu 413 and the Interaction Bus 414**
correspond to the TRIPS Interface & Interaction Bus 209 in FIG. 2—as well
as the main input menus at 155, 157, 161 and 163 in FIG. 1C—plus equivalent
input means like graphical user interfaces or GUIs. Moreover, the Main Menu 413
and **Interaction Bus 414 in FIG. 4** correspond to, and **coordinate the response**
to, alternative input means embedded in specialized TRIPS field or in-vehicle
embodiments that typically include the wireless communication of GPS position
sensor data along with simplified, "push-button" travel information inquiries sent
by users actually en route or at remote locations....” *Id.* at 37:54-67.

218. A POSITA would understand that that the communication control
module (*i.e.* Interface and Interaction Bus 209 in Fig. 2 or Main Menu 413 and
Interaction Bus 414) serves as an interface between retail consumer users (e.g. 205
in Fig. 2) and the various subsystems that comprise TRIPS (e.g. Topical Subsystem
213, Accounting Subsystem 217, Geographic Subsystem 221, and Temporal
Subsystem 223). A POSITA would further understand that the communication
control module is configured to interface with retail consumer users using different
types of devices using different communication protocols, including both Internet

based access (14:66-15:13) as well as access via a “simplified” request protocol from wireless communication devices (73:26-45; 73:67-74:29).

2. Claim 13.

a. The information management and synchronous communications system of claim 12

219. See the disclosures and related commentary to claim 12 discussed above as discussing the information management and synchronous communications system from claim 12.

b. wherein the communications control module provides a single point of entry for all hospitality applications and

220. DeLorme discloses this limitation. As discussed above, DeLorme discloses an Interaction Bus 209/414, that coordinates communication with the various input means. Ex. 1024 at 14:66-15:13, 73:26-45, 3:64-74:29, 22:63-66, and 37:54-67.

221. A POSITA would understand that that the communication control module (*i.e.* Interface and Interaction Bus 209 in Fig. 2 or Main Menu 413 and Interaction Bus 414) serves as an interface between retail consumer users (e.g. 205 in Fig. 2) and the various subsystems that comprise TRIPS (e.g. Topical Subsystem 213, Accounting Subsystem 217, Geographic Subsystem 221, and Temporal Subsystem 223). A POSITA would further understand that the communication

control module is thus configured to serve as a single point of entry for hospitality applications on different types of devices using different communication protocols, including both Internet based access (14:66-15:13) as well as access via a “simplified” request protocol from wireless communication devices (73:26-45; 73:67-74:29).

- c. 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.**

222. As discussed in more detail above, DeLorme discloses that the TRIPS data is synchronized data between the central database and at least one wireless handheld device (i.e. WCU 907) and at least one web page (downloaded from the TRIPS Internet web site). Ex. 1024 at 14:24-47, 72:37-43, and 72:67-73:6.

3. Claim 14.

- a. The information management and synchronous communications system of claim 13**

223. See the disclosures and related commentary to claim 13 discussed above as discussing the information management and synchronous communications system from claim 13.

- b. wherein 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.

224. DeLorme discloses that users may view updated real-time TRIPS data via the internet site.

225. “Once online, the preferred embodiment lets the user "view" or download updated TRIPS map data, functions and timely, topical travel information. ... When needed, TRIPS user inquiries can be processed online or via computer communications for immediate treatment and response. In sum, the FIG. 1A preferred embodiment facilitates access to current information and "real-time" services online....” Ex. 1024 at 14:24-42. *See also* 14:43-47.

226. DeLorme further discloses providing updated TRIPS data to wireless communication units: “FIG. 9 also depicts alternative TRIPS embodiments and remote usage scenarios which facilitate "on the spot" simplified travel planning and transactions, via WCU 907 from remote locations, by retail users actually en route, who have not necessarily engaged in previous desktop TRIPS travel planning sessions, arrangements, output or transfers specifically related to their current trip. ... In other words, FIG. 9 illustrates TRIPS embodiments for immediate travel inquiries and responses to and from TRIPS retail users "on the road" or at remote "field" locations.” *Id.* at 72:37-43; 72:67-73:6.

227. Because the TRIPS database maintains all travel and itinerary information, it would have been obvious to one of ordinary skill in the art that information entered on a TRIPS web page on a user's PC would automatically be entered into the TRIPS database and would automatically be reflected (e.g., in the form of an updated itinerary) in future downloads of that itinerary, including downloads to wireless handheld devices.

4. Claim 15.

a. The information management and synchronous communications system of claim 13

228. See the disclosures and related commentary to claim 13 discussed above as discussing the information management and synchronous communications system from claim 13.

b. wherein information entered on at least one wireless handheld computing device is automatically communicated to the central database and at least one Web page.

229. DeLorme discloses that users may view updated real-time TRIPS data via the internet site.

230. "Once online, the preferred embodiment lets the user "view" or download updated TRIPS map data, functions and timely, topical travel information.... When needed, TRIPS user inquiries can be processed online or via computer communications for immediate treatment and response. In sum, the

FIG. 1A preferred embodiment facilitates access to current information and "real-time" services online....” Ex. 1024 at 14:24-42. *See also* 14:43-47.

231. DeLorme further discloses providing updated TRIPS data to wireless communication units: “FIG. 9 also depicts alternative TRIPS embodiments and remote usage scenarios which facilitate "on the spot" simplified travel planning and transactions, via WCU 907 from remote locations, by retail users actually en route, who have not necessarily engaged in previous desktop TRIPS travel planning sessions, arrangements, output or transfers specifically related to their current trip.... **In other words, FIG. 9 illustrates TRIPS embodiments for immediate travel inquiries and responses to and from TRIPS retail users "on the road" or at remote "field" locations.**” *Id.* at 72:37-43; 72:67-73:6.

232. Because the TRIPS database maintains all travel and itinerary information, it would have been obvious to one of ordinary skill in the art that information entered on a wireless handheld device would automatically be entered into the TRIPS database and would automatically be reflected (e.g., in the form of an updated itinerary) in future downloads of that itinerary, including downloads to a web page on a user’s PC.

5. Claim 16.

a. **The information management and synchronous communications system of claim 12**

233. See the disclosures and related commentary to claim 12 discussed above as discussing the information management and synchronous communications system from claim 12.

b. **wherein 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.**

234. DeLorme discloses that users may view updated real-time TRIPS data via the internet site.

235. “Once online, the preferred embodiment lets the user "view" or download updated TRIPS map data, functions and timely, topical travel information.... When needed, TRIPS user inquiries can be processed online or via computer communications for immediate treatment and response. In sum, **the FIG. 1A preferred embodiment facilitates access to current information and "real-time" services online**....” Ex. 1024 at 14:24-42. *See also* 14:43-47.

236. DeLorme further discloses providing updated TRIPS data to wireless communication units: “FIG. 9 also depicts alternative TRIPS embodiments and remote usage scenarios which facilitate "on the spot" simplified travel planning

and transactions, via WCU 907 from remote locations, by retail users actually en route, who have not necessarily engaged in previous desktop TRIPS travel planning sessions, arrangements, output or transfers specifically related to their current trip.... **In other words, FIG. 9 illustrates TRIPS embodiments for immediate travel inquiries and responses to and from TRIPS retail users "on the road" or at remote "field" locations.**” *Id.* at 72:37-43; 72:67-73:6.

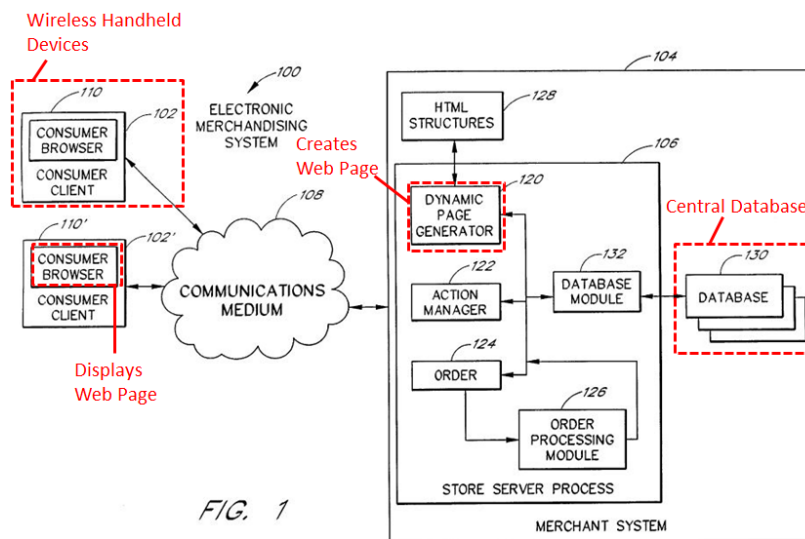
237. The communications between the TRIPS central database, the wireless computing handheld device, the Web server and the Web page are inherently digital. For example, Web servers and Web pages communicate using TCP/IP, which is a digital protocol. Additionally, the protocol used by the wireless computing handheld device is digital. Ex. 1024 at 72:7-15. In any event, it would have been obvious to one of ordinary skill in the art that data transmissions of claim 12 would be digital data transmissions.

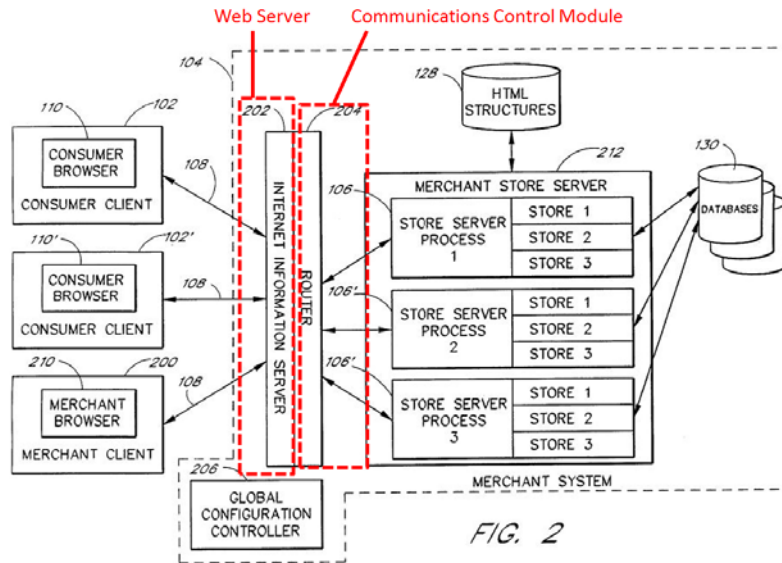
C. Obviousness of Claims 12-16 Based on Blinn and Inkpen.

238. It is my understanding that there are many legal bases under which two prior art references could be combined. It is my opinion that a person of ordinary skill in the art would have found it obvious to combine the system of Blinn with the hospitality applications disclosed in Inkpen because it would be combining use of known techniques to improve a similar device in the same way.

239. Blinn teaches a method and system for processing electronic sales transactions. The method and system described in Blinn set forth communications among client devices (including wireless personal digital assistants and standalone computers), the internet, and a merchant system including a database and communications control means.

240. Blinn maps on to the '850 patent according to the following figures:





241. Inkpen teaches a book length survey of several known travel information systems. Although several such information systems are disclosed, for purposes of the Petition, the information system developed by Marriott will be the focus. The Marriott system serves as a system that handles hotel reservations over the internet through using a Travel Web server. The Travel Web server may be used by consumers to make reservations. *Id.* at 218, col.1, lines 35-40. In addition to the Travel Web server, a user may also connect to one of Marriott's front end servers to access the Marriott.com website, which were new as of 1996. *Id.* at 229, col. 2, lines 37-43. A user can get certain information via the Marriott.com website (*e.g.*, room rates, property descriptions, hotel addresses), but can only check availability and make reservations via a connection through the Marriott

server to the Travel Web site to the THISCO switch and then to MARSHA. *Id.* at 230, col. 1, line 44- col. 2, line 49.

242. It is my opinion that it would have been obvious to a person of ordinary skill in the art to combine the prior art elements of Blinn and Inkpen to achieve an online merchant system that includes the capability for online transactions with hospitality applications. Such a combination would have been a use of a known technique to improve a similar device in the same way because it simply would have integrated the functionality of two methods of user interaction including online sales of specific types, such as hospitality applications. Such methods are well within the grasp of a programmer and would easily be recognized as ways to implement such a system. For instance, Blinn's describes the capability to modify the application based on a "merchant's unique sales transactions," which a POSITA would understand could include hospitality-specific transactions. *See* Ex. 1025 at 38:43-47; *see also* 1:11-18, 1:30-38, 4:66-5:3. Indeed, in Blinn, the inventors identified in a preferred embodiment the flexibility to include adaptable electronic orders for different sales situations. Ex. 1025 at 1:67-2:3. Additionally, as discussed above, Inkpen discloses hospitality applications and data for use in its MARSHA computerized reservation system, and a POSITA would have found it obvious to include the hospitality applications from Inkpen/MARSHA into the

system disclosed by Blinn to permit Blinn to function with hospitality applications. Both references address the problem of web based transactions.

243. It is my opinion that a person of ordinary skill in the art would find that Blinn in view of Inkpen renders obvious each and every element of claims 12-16.

1. Claim 12

a. An information management and synchronous communications system for use with wireless handheld computing devices and the internet comprising

244. Blinn discloses a system for processing electronic sales transactions through using an information management and synchronous communications system, which includes wireless handheld computing devices and the internet.

245. “The present invention provides a method and system for processing electronic sales transactions. In a preferred embodiment, an electronic merchandising system allows merchants to create electronic orders which are easily adaptable for different sales situations.” Ex. 1025 at Abstract.

246. “Focusing now on the communications medium 108 as shown in FIG. 2, the presently preferred communications medium 108 includes the Internet which is a global network of computers. The structure of the Internet, which is well

known to those of ordinary skill in the art, includes a network backbone with networks branching from the backbone.” Ex. 1025 at 9:10-16.

247. “In other embodiments, the consumer computer 102 could, for example, be a computer workstation, a local area network of computers, an interactive television, an interactive kiosk, a personal digital assistant, an interactive wireless communications device or the like which can interact with the communications medium 108.” Ex. 1025 at 10:9-14; *see also* Ex. 1025 at Abstract; Figs. 1, 2 at 102 and 108; 9:11-12; 10:12-14; 13:36-43.

b. a. a central database containing hospitality applications and data,

248. Blinn discloses a database, identified as 130 in Figures 1 and 2, hosted by a centralized merchant system computer that includes hospitality applications and data on store server process 106.

249. “[T]he store server process 106 is in communication with one or more databases 130 with a database module 132.” Ex. 1025 at 8:9-11.

250. “The merchant system 104 includes an internet information server 202, a router 204, a global configuration controller 205, at least one merchant store server 212, a storage medium for HTML structures 128 and one or more databases 130.” Ex. 1025 at 11:31-41; *see also* Figs. 1 and 2 at 130.

251. Inkpen discloses a central database including the MARSHA computerized reservation system that includes a database that stores reservation records. Ex. 1021 at Figure 5.36 and pp. 230-31.

252. It would have been obvious to one of ordinary skill in the art that the database 130 could contain hospitality applications and data. For instance, Blinn's describes the capability to modify the application based on a "merchant's unique sales transactions," which a POSITA would understand could include hospitality-specific transactions. *See* Ex. 1025 at 38:43-47; *see also* 1:11-18, 1:30-38, 4:66-5:3. Indeed, in Blinn, the inventors identified in a preferred embodiment the flexibility to include adaptable electronic orders for different sales situations. *Id.* at 1:67-2:3. Additionally, as discussed above, Inkpen discloses hospitality applications and data for use in its MARSHA computerized reservation system, and a POSITA would have found it obvious to include the hospitality applications from Inkpen/MARSHA into the system disclosed by Blinn to permit Blinn to function with hospitality applications.

c. b. at least one wireless handheld computing device on which hospitality applications and data are stored,

253. Blinn discloses an interactive wireless communications device such as a personal digital assistant which interacts with a communications medium and

includes software allowing access to the merchant system. The consumer client 102 is a wireless computing device. Ex. 1025 at Figs. 1 and 2 at 102; 10:9-32.

254. “. . . the consumer computer 102 could, for example, be a computer workstation, a local area network of computers, an interactive television, an interactive kiosk, a personal digital assistant, an interactive wireless communications device or the like which can interact with the communications medium 108.” Ex. 1025 at 10:9-14.

255. “For example, the communications medium 108 can include...wireless data transmission systems” Ex. 1025 at 9:23-28.

256. Regarding the disclosure of “hospitality applications” for this claim element, this is discussed above with regard to the Inkpen disclosure at ¶¶ 251-52 above.

257. It would have been obvious to a POSITA that the consumer computer 102 could have stored hospitality applications and data. *See* Ex. 1025 at 38:43-47; *see also* 1:11-18, 1:30-38, 4:66-5:3. It would further have been obvious to a POSITA that Blinn’s interactive wireless communications device could be a handheld device.

- d. c. at least one Web server on which hospitality applications and data are stored,**

258. Blinn discloses an Internet information server which works in conjunction with the merchant system. *See* Ex. 1025 at Fig. 2 at 202; 1:19-29; 12:23-34.

259. “Typically, a Web site is an Internet-connected computer or computer system which runs server software for serving information using the standard protocols of the World Wide Web.” Ex. 1025 1:22-25.

260. “The Internet information server 202 is a World Wide Web server. The Internet information server 202 supports the use of virtual servers, allowing multiple web servers to run on a single computer. The Internet information server 202 also uses the HyperText Transmission Protocol (HTTP) to communicate with the consumer browsers 110 or the merchant browser 210.” - Ex. 1025 12:23-29.

261. Regarding the disclosure of “hospitality applications” for this claim element, this is discussed above with regard to the Inkpen disclosure at ¶¶ 251-52 above.

262. It would have been obvious to a POSITA that the web server 202 could have stored hospitality applications and data. *See* Ex. 1025 at 38:43-47; *see also* Ex. 1025 at 1:11-18, 1:30-38, 4:66-5:3.

- e. **d. at least one Web page on which hospitality applications and data are stored,**

263. Blinn discloses web pages hosted by merchants created by a dynamic page generator on a store server process which provides the web page to the consumer client. Ex. 1025 at Fig. 1 at 102, 106, 110 and 120; Fig. 2 at 106; 1:22-29; 8:36-44.

264. “Typically, a Web site is an Internet-connected computer or computer system which runs server software for serving information using the standard protocols of the World Wide Web.” Ex. 1025 at 1:22-25.

265. “When a consumer directs the consumer browser 110 on the consumer computer to access the merchant system 104, the dynamic page generator 120 creates web pages with illustrate different watches offered for sale.” Ex. 1025 at 8:36-39.

266. Regarding the disclosure of “hospitality applications” for this claim element, this is discussed above with regard to the Inkpen disclosure ¶¶ 251-52 above.

267. Blinn discloses that a “merchant can add other components to customize the flexible electronic merchandising system 100 for the merchant’s unique sales transactions.” Ex. 1025 at 38:43-47. It would have been obvious to a POSITA that the wireless handheld computing device rendering the web page via a

browser could have stored hospitality applications and data. *See* Ex. 1025 at 38:43-47; *see also* 1:11-18, 1:30-38, 4:66-5:3.

f. e. an application program interface, and

268. Blinn discloses communication with third party credit card authorization software including “VeriFone’s Point of Sale (vPOS) software.” Ex. 1025 37:61-62; *see also* Fig. 12C, 30:32-37, and 37:55-64.

269. In order to integrate the VeriFone Point of Sale software with the Merchant System 104, an application program interface would be required so that the two systems could communicate with each other. Accordingly, a POSITA would understand Blinn to disclose an application program interface.

g. f. a communications control module,

270. Blinn discloses a communications control module comprised of the router which acts as an interface between the internet and the store server process.

271. “In the preferred embodiment, the router 204 and the merchant store server 212 utilize the global configuration information to interconnect the consumer browsers 110 with the store server processes 106.” Ex. 1025 at 12:50-53.

272. Additionally, the communications control module functionality is performed by the TCP/IP stack within the merchant system 104: “The Microsoft Windows® NT operating system includes a TCP/IP stack which handles all

incoming and outgoing message traffic passed over the communications medium 108.” Ex. 1025 at 11:65-12:1.

273. By handling “all incoming and outgoing message traffic” sent to and from the merchant system, the TCP/IP stack working in conjunction with the router 204 serve the role of the communications control module.

h. 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;

274. Blinn discloses applications and data synchronized across the central database described above in 12a above, the wireless personal digital assistant described in element 12b above, the Web server described in 12c above, and the Web page described in 12d above.

275. “The consumer client 102 contains a consumer browser 110. The consumer browser 110 communicates with the store server process 106 and displays the web documents created by the store server process 106. Each store server process 106 provides a server architecture that supports the presentation and administration of a virtual store. Preferably, the store server process 106 comprises a number of components including a dynamic page generator 120, an action manager 122, one or more orders 124 and an order processing module 126. Furthermore, in communication with the store server process 106 is a storage

device such as a hard disk which contains HTML structures 128 which define the layout of different HTML pages. In addition, the store server process 106 is in communication with one or more databases 130 with a database module 132.” Ex. 1025 7:64-8:11.

276. “In other embodiments, the consumer computer 102 could, for example, be a computer workstation, a local area network of computers, an interactive television, an interactive kiosk, a personal digital assistant, an interactive wireless communications device or the like which can interact with the communications medium 108. While in such systems the operating systems will differ, they will continue to provide the appropriate communications protocols needed to establish communication links with the communications medium 108.” *Id.* at 10:9-18.

277. “During a typical shopping session, the consumer browser 110 and the store server process 106 communicate with each other over the communications medium 108. Typically, the consumer browser 110 sends URL addresses to the store server process 106, and the store server process 106 responds with HTML documents. The HTML documents may contain registration information, product offerings, promotional advertisements, order forms, etc.” *Id.* at 13:36-43.

278. “Associated with the shopper table 300 is the shopper manager 320. The shopper manager 320 adds, modifies and deletes the entries existing in the shopper table 300.” *Id.* at 16:1-6.

279. “The product variant table 802 is also merchant defined and stores information for a specific product within the product family. Each row in the product variant table 802 is a record corresponding to a particular product while each column contains information related to the products. For example, the product variant columns may contain a product's family identifier, stock keeping unit (sku), a color value, a size value, etc. The format of the product family table 800 is merchant defined and can contain wide variety of product characteristics. The merchant specifies the location of a query which queries the product variant table 802 in the registry.” *Id.* at 16:34-45.

280. “In addition, the URL can contain the number of items (quantity) and the price of the items.” *Id.* at 18:26-28.

281. “The OrderItemValidate component 1226*b* is configured to check the order 124 for required items, and verify that the required items exist.” *Id.* at 24:36-38.

282. “The components in the inventory stage 386 verify that every selected item is in stock.” *Id.* at 29:61-62.

283. “When the ReduceLocalInventory component 1282e receives the order 124, the ReduceLocalInventory component 1282e reduces the inventory in an inventory database 130 by the number of products ordered. The ReduceLocalInventory component 1282e uses the sku key-value pairs and the quantity key-value pairs to specify a database query which deducts the quantity amounts from the database 130.” *Id.* at 38:25-31; *see also* Fig. 6.

284. It would have been obvious to a POSITA that upon the store server process and consumer browsers on computers and handheld devices becoming connected, the sales and item data maintained on the store server databases would be sent to the consumer browsers, including PocketWeb and NetHopper, and rendered on the consumer computer and wireless handheld device, and thereby the data and applications on the store server process and the consumer browsers on the computers and handheld devices would become synchronized (as that term is properly construed). This is further evidenced by the inventory stage, which adjusts the quantities in the database upon a sale made via one of the consumer browsers such that future downloads reflect the adjusted inventory levels, thereby achieving synchronization. Ex. 1025 at 36:29-51 and 38:25:31. Additionally, Figure 6’s display of the credit card user’s name “Gary” evidences synchronization among the devices of Blinn’s system because the user “Gary” had to input his

name prior to the display of Figure 6, and the fact that “Gary’s” name is displayed in Fig. 6 indicates that it was communicated to the requisite devices (i.e., the Web server, etc.).

i. wherein the application program interface enables integration of outside applications with the hospitality applications and

285. Blinn discloses that the system discloses communication with third party credit card authorization software including “VeriFone’s Point of Sale (vPOS) software” that integrates with the hospitality applications on the store server process 106 to process the order. Ex. 1025 at 37:61-62; *see also* Ex. 1025 8:23-34; 37:55-38:4.

286. Regarding the disclosure of “hospitality applications” for this claim element, this is discussed above with regard to the Inkpen disclosure at ¶¶ 251-52 above.

287. The store server process 106 in creating and completing an order integrates with the third party VeriFone Point of Sale software. This evidences the claimed integration of the outside applications, such as VeriFone’s Point of Sale software, with the store server processes that allows the VeriFone vPOS software to verify the credit card payments of the end user, including information input by the purchaser which shows up on the purchase screen in Figure 6. This information will thus be reflected in the database, store server process as well as on

the web server and web pages downloaded to the consumer computer and wireless handheld device.

j. wherein the communications control module is an interface between the hospitality applications and any other communications protocol.

288. Blinn discloses the communications control module described in element 12f above serving as an interface between the hospitality applications on the store server processes and any other communications protocol because the communications control module disclosed by Blinn handles all incoming and outgoing message traffic, which would include the hospitality applications and other communications protocol.

289. “The Microsoft Windows® NT operating system includes a TCP/IP stack which handles all incoming and outgoing message traffic passed over the communications medium 108.” Ex. 1025 at 11:65-12:1; Fig. 2 at 205.

290. “In the preferred embodiment, the router 204 and the merchant store server 212 utilize the global configuration information to interconnect the consumer browsers 110 with the store server processes 106.” *Id.* at 12:50-53.

291. Additionally, Blinn contains a communications control module that interfaces between the store server process and one or more other communications protocols, which is necessarily present given the system features.

292. Regarding the disclosure of “hospitality applications” for this claim element, this is discussed above with regard to the Inkpen disclosure ¶¶ 251-52 above.

2. Claim 13

a. The information management and synchronous communications system of claim 12

293. See the disclosures and related commentary to claim 12 discussed above as discussing the information management and synchronous communications system from claim 12.

b. wherein the communications control module provides a single point of entry for all hospitality applications and

294. Blinn discloses a communications control module comprised of the router which acts as an interface between the internet and the store server process.

295. “In the preferred embodiment, the router 204 and the merchant store server 212 utilize the global configuration information to interconnect the consumer browsers 110 with the store server processes 106.” Ex. 1025 at 12:50-53.

296. Additionally, the communications control module functionality is performed by the TCP/IP stack within the merchant system 104: “The Microsoft Windows® NT operating system includes a TCP/IP stack which handles all

incoming and outgoing message traffic passed over the communications medium 108.” Ex. 1025 at 11:65-12:1.

297. Regarding the disclosure of “hospitality applications” for this claim element, this is discussed above with regard to the Inkpen disclosure at ¶¶ 251-52 above.

298. By handling “all incoming and outgoing message traffic” sent to and from the merchant system, the TCP/IP stack working in conjunction with the router 204 serves as a single point of entry for all applications.

- c. 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.**

299. Blinn discloses the single point of entry described above allowing the synchronization of the wireless personal digital assistant described in 12b and the Web page described in 12d with the central database described in 12a through the consumer browser 110 by the communication among the personal digital assistant from 12b, the Web page from 12d and the central database from 12b through the router 204.

300. “The router 204 examines the universal resource locator (URL) address specified in a consumer browser 110 or merchant browser request, and

determines from the URL if the URL is a request which specifies one of the merchant store servers 212. In the preferred embodiment, the router 204 and the merchant store server 212 utilize the global configuration information to interconnect the consumer browsers 110 with the store server processes 106.” Ex. 1025 at 12:46-53.

301. It would have been obvious to a POSITA that upon the store server process and consumer browsers on computers and handheld devices becoming connected, the sales and item data maintained on the store server databases would be sent to the consumer browsers, including PocketWeb and NetHopper rendered on the consumer computer and wireless handheld device, and thereby the data and applications on the store server process and the consumer browsers on the computers and handheld devices would become synchronized (as that term is properly construed). This is further evidenced by the inventory stage, which adjusts the quantities in the database upon a sale made via one of the consumer browsers such that future downloads reflect the adjusted inventor levels, thereby achieving synchronization. Ex. 1025 at 36:29-51 and 38:25:31. Additionally, Figure 6’s display of the credit card user’s name “Gary” evidences synchronization among the devices of Blinn’s system because the user “Gary” had to input his name prior to the display of Figure 6, and the fact that “Gary’s” name is displayed

in Fig. 6 indicates that it was communicated to the requisite devices (i.e., the Web server, etc.).

3. Claim 14

a. The information management and synchronous communications system of claim 13

302. See the disclosures and related commentary to claim 13 discussed above as discussing the information management and synchronous communications system from claim 13.

b. wherein 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.

303. Blinn discloses the single point of entry described above allowing the synchronization of the wireless personal digital assistant described in 12b and the Web page described in 12d with the central database described in 12a through the consumer browser 110 by the communication among the personal digital assistant from 12b, the Web page from 12d and the central database from 12b through the router 204.

304. “The router 204 examines the universal resource locator (URL) address specified in a consumer browser 110 or merchant browser request, and determines from the URL if the URL is a request which specifies one of the merchant store servers 212. In the preferred embodiment, the router 204 and the

merchant store server 212 utilize the global configuration information to interconnect the consumer browsers 110 with the store server processes 106.” Ex. 1025 at 12:46-53.

305. It would have been obvious to a POSITA that upon the store server process and consumer browsers on computers and handheld devices becoming connected, the sales and item data maintained on the store server databases would be sent to the consumer browsers, including PocketWeb and NetHopper, rendered on the consumer computer and wireless handheld device, and thereby the data and applications on the store server process and the consumer browsers on the computers and handheld devices would become synchronized (as that term is properly construed). This is further evidenced by the inventory stage, which adjusts the quantities in the database upon a sale made via one of the consumer browsers such that future downloads reflect the adjusted inventor levels, thereby achieving synchronization. Ex. 1025 at 36:29-51 and 38:25:31. Additionally, Figure 6’s display of the credit card user’s name “Gary” evidences synchronization among the devices of Blinn’s system because the user “Gary” had to input his name prior to the display of Figure 6, and the fact that “Gary’s” name is displayed in Fig. 6 indicates that it was communicated to the requisite devices (i.e., the Web server, etc.).

306. Blinn discloses that information entered on the Web page is transmitted over the internet and automatically communicated to the central database and personal digital assistant through their communication links with the communications medium. Ex. 1025 at 10:9-18; 15:35-47.

307. Because the database maintains all data and inventory records, it would have been obvious to one of ordinary skill in the art that information entered on a Web page on a user's PC, for example a purchase of an item, would automatically be entered into the database and would automatically be reflected (e.g., in the form of an availability indication) in future downloads of Web pages for that item, including Web pages downloaded to wireless handheld devices. *See* Ex. 1025 at 10:9-18, 15:35-47, 36:22-51; and 38:25-31.

308. Additionally, the Web page of claim 14 could be a Web page listing items for purchase being rendered on a wireless handheld device. In that instance, it would have been obvious to one of ordinary skill in the art that information pertinent to a purchase request entered on a Web page (e.g., the user's name, shipping address, etc.) would be automatically communicated to the database and a purchase confirmation Web page including the same information would be automatically sent back to the wireless handheld device from which the purchase

had been made. Such confirmation/checkout pages were widely well known in the art at the time of the '850 patent.

4. Claim 15.

a. The information management and synchronous communications system of claim 13

309. See the disclosures and related commentary to claim 13 discussed above as discussing the information management and synchronous communications system from claim 13.

b. wherein information entered on at least one wireless handheld computing device is automatically communicated to the central database and at least one Web page.

310. Blinn discloses the single point of entry described above allowing the synchronization of the wireless personal digital assistant described in 12b and the Web page described in 12d with the central database described in 12a through the consumer browser 110 by the communication among the personal digital assistant from 12b, the Web page from 12d and the central database from 12b through the router 204.

311. "The router 204 examines the universal resource locator (URL) address specified in a consumer browser 110 or merchant browser request, and determines from the URL if the URL is a request which specifies one of the merchant store servers 212. In the preferred embodiment, the router 204 and the

merchant store server 212 utilize the global configuration information to interconnect the consumer browsers 110 with the store server processes 106.” Ex. 1025 at 12:46-53.

312. It would have been obvious to a POSITA that upon the store server process and consumer browsers on computers and handheld devices becoming connected, the sales and item data maintained on the store server databases would be sent to the consumer browsers, including PocketWeb and NetHopper, rendered on the consumer computer and wireless handheld device, and thereby the data and applications on the store server process and the consumer browsers on the computers and handheld devices would become synchronized (as that term is properly construed). This is further evidenced by the inventory stage, which adjusts the quantities in the database upon a sale made via one of the consumer browsers such that future downloads reflect the adjusted inventor levels, thereby achieving synchronization. Ex. 1025 at 36:29-51 and 38:25:31. Additionally, Figure 6’s display of the credit card user’s name “Gary” evidences synchronization among the devices of Blinn’s system because the user “Gary” had to input his name prior to the display of Figure 6, and the fact that “Gary’s” name is displayed in Fig. 6 indicates that it was communicated to the requisite devices (i.e., the Web server, etc.). *See also, id.* at 10:9-18.

313. Because the database maintains all data and inventory records, it would have been obvious to one of ordinary skill in the art that information entered on a Web page on a user's PC, for example a purchase of an item, would automatically be entered into the database and would automatically be reflected (e.g., in the form of an availability indication) in future downloads of Web pages for that item, including Web pages downloaded to wireless handheld devices. *See* Ex. 1025 at 10:9-18, 15:35-47, 36:22-51; and 38:25-31.

314. Additionally, the Web page of claim 15 could be a Web page for items for purchase being rendered on a wireless handheld device. In that instance, it would have been obvious to one of ordinary skill in the art that information pertinent to a purchase request entered on a Web page (e.g., the user's name, shipping address, etc.) would be automatically communicated to the database and a sales Web page including the same information would be automatically sent back to the wireless handheld device from which such purchase had been made. Such confirmation/checkout pages were widely well known in the art at the time of the '850 patent.

5. Claim 16.

a. The information management and synchronous communications system of claim 12

315. See the disclosures and related commentary to claim 12 discussed above as discussing the information management and synchronous communications system from claim 12.

- b. wherein 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.**

316. Blinn discloses applications and data synchronized across the central database described above in 12a above, the wireless personal digital assistant described in element 12b above, the Web server described in 12c above, and the Web page described in 12d above.

317. “The consumer client 102 contains a consumer browser 110. The consumer browser 110 communicates with the store server process 106 and displays the web documents created by the store server process 106. Each store server process 106 provides a server architecture that supports the presentation and administration of a virtual store. Preferably, the store server process 106 comprises a number of components including a dynamic page generator 120, an action manager 122, one or more orders 124 and an order processing module 126. Furthermore, in communication with the store server process 106 is a storage device such as a hard disk which contains HTML structures 128 which define the layout of different HTML pages. In addition, the store server process 106 is in

communication with one or more databases 130 with a database module 132.” Ex. 1025 7:64-8:11.

318. “In other embodiments, the consumer computer 102 could, for example, be a computer workstation, a local area network of computers, an interactive television, an interactive kiosk, a personal digital assistant, an interactive wireless communications device or the like which can interact with the communications medium 108. While in such systems the operating systems will differ, they will continue to provide the appropriate communications protocols needed to establish communication links with the communications medium 108.” *Id.* at 10:9-18.

319. “During a typical shopping session, the consumer browser 110 and the store server process 106 communicate with each other over the communications medium 108. Typically, the consumer browser 110 sends URL addresses to the store server process 106, and the store server process 106 responds with HTML documents. The HTML documents may contain registration information, product offerings, promotional advertisements, order forms, etc.” *Id.* at 13:36-43.

320. “Associated with the shopper table 300 is the shopper manager 320. The shopper manager 320 adds, modifies and deletes the entries existing in the shopper table 300.” *Id.* at 16:1-6.

321. “The product variant table 802 is also merchant defined and stores information for a specific product within the product family. Each row in the product variant table 802 is a record corresponding to a particular product while each column contains information related to the products. For example, the product variant columns may contain a product's family identifier, stock keeping unit (sku), a color value, a size value, etc. The format of the product family table 800 is merchant defined and can contain wide variety of product characteristics. The merchant specifies the location of a query which queries the product variant table 802 in the registry.” *Id.* at 16:34-45.

322. “In addition, the URL can contain the number of items (quantity) and the price of the items.” *Id.* at 18:26-28.

323. “The OrderItemValidate component 1226*b* is configured to check the order 124 for required items, and verify that the required items exist.” *Id.* at 24:36-38.

324. “The components in the inventory stage 386 verify that every selected item is in stock.” *Id.* at 29:61-62.

325. “When the ReduceLocalInventory component 1282*e* receives the order 124, the ReduceLocalInventory component 1282*e* reduces the inventory in an inventory database 130 by the number of products ordered. The

ReduceLocalInventory component 1282e uses the sku key-value pairs and the quantity key-value pairs to specify a database query which deducts the quantity amounts from the database 130.” *Id.* at 38:25-31; *see also* Fig. 6.

326. It would have been obvious to a POSITA that upon the store server process and consumer browsers on computers and handheld devices becoming connected, the sales and item data maintained on the store server databases would be sent to the consumer browsers, including PocketWeb and NetHopper, rendered on the consumer computer and wireless handheld device, and thereby the data and applications on the store server process and the consumer browsers on the computers and handheld devices would become synchronized (as that term is properly construed). This is further evidenced by the inventory stage, which adjusts the quantities in the database upon a sale made via one of the consumer browsers such that future downloads reflect the adjusted inventor levels, thereby achieving synchronization. Ex. 1025 at 36:29-51 and 38:25:31; *see also*, Fig. 1 at 102, 120; Fig.2 at 102, 110, and 202; 1:25-29; 8:9-11; 10:9-18; 13:36-43.

Additionally, Figure 6’s display of the credit card user’s name “Gary” evidences synchronization among the devices of Blinn’s system because the user “Gary” had to input his name prior to the display of Figure 6, and the fact that “Gary’s” name

is displayed in Fig. 6 indicates that it was communicated to the requisite devices (i.e., the Web server, etc.).

327. The communications between the database, the wireless computing handheld device, the Web server and the Web page are inherently digital. For example, Web servers and Web pages communicate using TCP/IP (disclosed in Blinn in connection with the TCP/IP stack), which is a digital protocol.

Additionally, the '850 patent describes that “digital wireless communications devices [were] in common use” at the time of the alleged invention. Ex. 1003 at 1:28-31. In any event, it would have been obvious to one of ordinary skill in the art that the data transmissions of claim 12 would be digital data transmissions.

VIII. Patentability Analysis of the '325 Patent

328. I have reviewed the claims of the '325 patent and compared those to the prior art known to me.

329. As detailed below, I believe claims 11-13 and 15 of the '325 patent would have been obvious to one of ordinary skill in the art as of the earliest possible priority date of the '325 patent on the grounds set forth below.

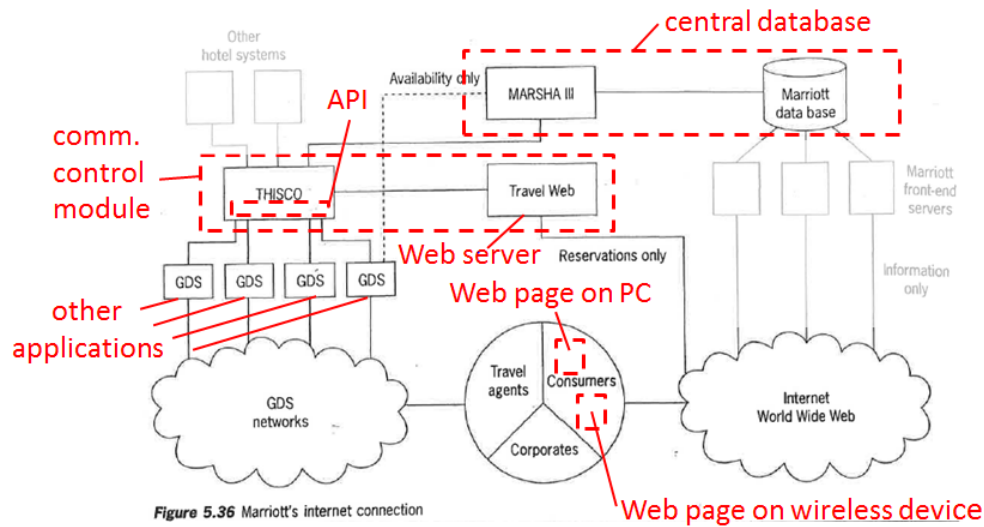
A. Obviousness of Claims 11, 13, and 15 Based on Inkpen, Nokia, and Digestor

330. It is my understanding that there are many legal bases under which two prior art references could be combined. It is my opinion that a person of

ordinary skill in the art would have found it obvious to combine the system of Inkpen with the techniques and environment of Digestor and Nokia because it would be combining use of known techniques to improve a similar device in the same way.

331. Inkpen teaches a book length survey of several known travel information systems. Although several such information systems are disclosed, for purposes of the Petition, the information system developed by Marriott will be the focus. The Marriott system serves as a system that handles hotel reservations over the internet through using a Travel Web server. The Travel Web server may be used by consumers to make reservations. *Id.* at 218, col.1, lines 35-40. In addition to the Travel Web server, a user may also connect to one of Marriott's front end servers to access the Marriott.com website, which were new as of 1996. *Id.* at 229, col. 2, lines 37-43. A user can get certain information via the Marriott.com website (*e.g.*, room rates, property descriptions, hotel addresses), but can only check availability and make reservations via a connection through the Marriott server to the Travel Web site to the THISCO switch and then to MARSHA. *Id.* at 230, col. 1, line 44- col. 2, line 49.

332. Inkpen maps on to the '850 patent as illustrated below:



333. Digestor teaches “a software system which automatically re-authors arbitrary documents from the world-wide web to display on small screen devices such as PDAs and cellular phones, providing device independent access to the web.” Ex. 1022 at Abstract. Digestor discloses four approaches for formatting documents for small screens, including: (1) device-specific authoring, (2) multiple-device authoring, (3) client-side navigation, and (4) automatic re-authoring. *Id.* at 1076. Automatic re-authoring, can be performed at either the server, the client, or an intermediate device. *Id.*

334. Nokia discloses a web-capable mobile device. Nokia is an owner’s manual for the Nokia 9000i Communicator. Ex. 1023 at 7. The Nokia 9000i Communicator, specifically mentioned in Digestor (Ex. 1022 at 1075), includes “a mobile phone, messaging device, Internet access terminal, and palmtop organizer

all in one compact unit” with the phone interface on the device cover and the other interfaces under the device cover. The 9000i Communicator included a web browser for viewing world wide web pages, including HTML web pages. *Id.* at 63.

335. In addition, wireless handheld devices that had wireless internet access and a web browser capable of rendering web pages include the Nokia 9000i Communicator, Samsung Duett, Sharp TQ-G700, Sharp MI-10, and the Novatel Contact. At the Critical Date of the Patents, there were a number of well-known, commercially available portable computing devices such as cellular phones, PDAs and handheld computers such as the Apple Newton MessagePad, SONY MagicLink, Windows CE devices from Compaq, Casio and NEC; various Palm Computing PDAs; as well as a number of devices from Nokia and Motorola. These devices all supported the use of Web browsers including such browser applications as NetHopper, MagicLink, Top Gun Wingman, and Microsoft Mobile Explorer. These handheld device browsers would be well-known to a POSITA and were being created, discussed and improved upon as early as 1994.

336. It is my opinion that it would have been obvious to a POSITA to combine Inkpen, Nokia and Digestor by using the Nokia 9000i Communicator device disclosed in Nokia to access Travel Web pages such as those disclosed in

Inkpen to make, e.g., hotel reservations. It should be noted that claims 11, 13 and 15 do not require any reformatting of any menus or other data for a smaller screen on a wireless handheld device, do not require that the wireless handheld device utilize a hospitality application different from a Web page rendered by a browser and do not otherwise preclude the hospitality application on the wireless handheld device from being a Web page rendered by a browser. Thus, the “wireless handheld device” limitations of claims 11-13 would be satisfied by a handheld device that had wireless internet access and a web browser capable of rendering the pages on the Travel Web site. Such devices include the Nokia 9000i Communicator (Ex. 1023 at 61) as well as Samsung Duett, Sharp TQ-G700 and Sharp MI-10 (Ex. 1022 at 1075), and the Novatel Contact (Ex. 1065 at 52). . It should further be noted that nothing in the claims of the '325 patent preclude both the “web page” and the “wireless handheld device” from being implemented as wireless handheld devices with browsers, and this affects all grounds raised for patentability challenges.

337. Even if the Challenged Claims were to be interpreted as requiring the reformatting of data for a small screen on a wireless handheld device, it would have been obvious to a POSITA to configure the Travel Web server of Inkpen to modify web pages for the smaller screen size of a wireless hand-held device such

as the Nokia 9000i Communicator in view of Digestor. For example, as Digestor discloses (Ex. 1022) at 1076, col. 1, lines 6-9, a POSITA would have known that it was possible to author Web pages for specific devices including the Nokia 9000i Communicator. Alternatively, a POSITA would have known how to employ Digestor's automatic re-authoring techniques to transform a World Wide Web page for given display characteristics of a particular device such as the Nokia 9000i Communicator so that a Web page could be more appropriately displayed on that device.

338. The combination of Inkpen, Nokia and Digestor renders each of claims 11, 13 and 15 obvious, in which the following mapping of claim limitations to blocks in diagram 5.36 of Inkpen will be made:

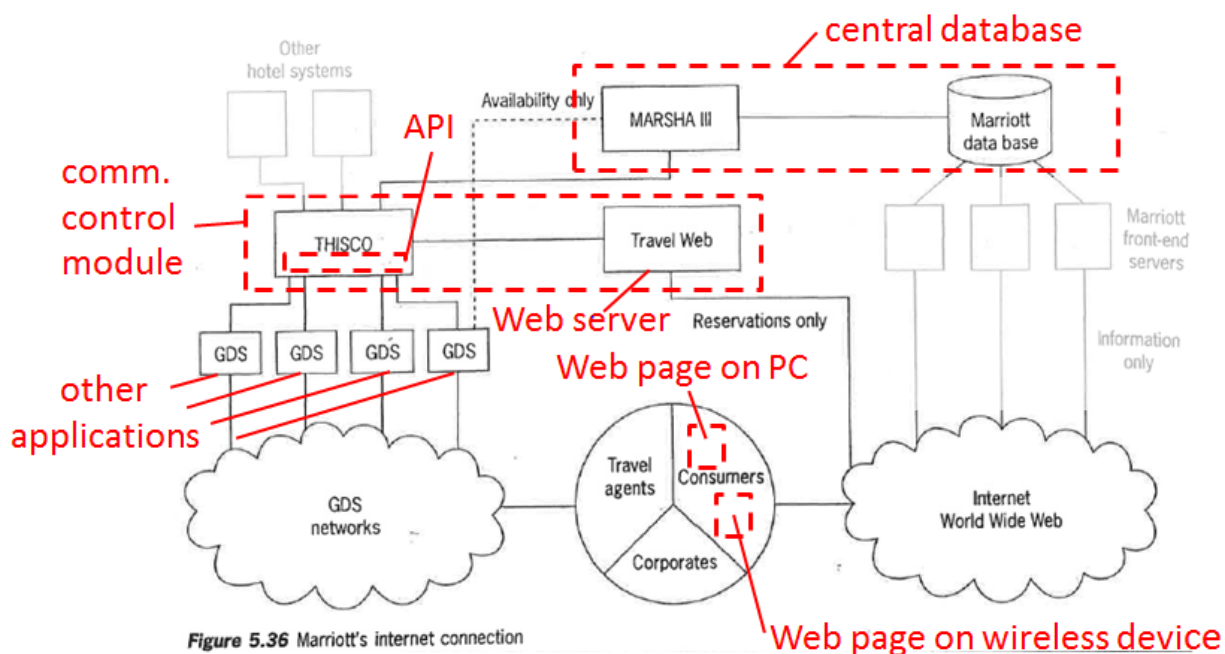
a. The "central database" of the claims is mapped onto the combination of MARSHA CRS and the Marriott database storage device. This is proper as BRI of "database" includes not only data/records but routines to search, sort and recombine the data/records. Additionally, the '325 patent describes the central database as a "backoffice server" (Ex. 1003 at 2:28), and it is was well known to a POSITA at the time of the '325 patent that a server includes both a computer and one or more storage devices,

which can be as simple as a single hard disk or as complex as a SAN (storage area network) including multiple interconnected storage devices.

- b. The “communications control module” is mapped onto the THISCO switch.
- c. The “outside applications” are mapped onto the GDSs.
- d. The “application program interface” is mapped onto the code on the THISCO switch that translates the messages and commands in the various GDS protocols such as the TPF protocol to the format and protocol accepted by MARSHA.
- e. The Web server is mapped onto the Travel Web server.
- f. The Web page is an instance of a page from the Travel Web server rendered on any end user device such as a personal computer, laptop, PDA or smartphone.

339. Several variations to the system of figure 5.36 would have been obvious to a POSITA at the time of the alleged invention of the Challenged Claims. For example, it would have been obvious to a POSITA that the dotted line direct connection from one of the GDSs to the MARSHA CRS was optional and therefore could be omitted from the system of Figure 5.36. Alternatively, the one GDS that was directly connected to the MARSHA could itself have been omitted

from the system of figure 5.36. Additionally, Inkpen discloses that the integration of the Marriott front end servers with the MARSHA system and Marriott database was relatively new. Ex. 1021 at 229. It would have been obvious to a POSITA that the Marriott front end servers could be eliminated from the system of figure 5.36 such that all internet transactions would originate from clients connected to the Travel Web server. An annotated version of figure 5.36 indicating the aforementioned modifications and mapping is set forth below:



340. It is my opinion that a person of ordinary skill in the art would find that Inkpen in view of Nokia and Digester renders obvious each and every element of claims 11, 13, and 15.

1. Claim 11

a. **An information management and synchronous communications system for use with wireless handheld computing devices and the internet comprising**

341. Inkpen discloses a communications system utilized by Marriott for hotel reservations which may be made via the Internet.

342. Inkpen discloses a communications system utilized by Marriott for hotel reservations which may be made via the Internet.

343. “Marriott has been highly successful in using technology to market and sell hotel rooms and related services to customers around the world. The cornerstone of this distribution activity is Marriott’s central reservation system, MARSHA (you can find more information on MARSHA in Marriott’s interconnection to GDSs in Chapter 3).... However, when an Internet user wishes to view availability or make a booking, the server routes the enquiry via a third route – a direct connection to TravelWeb. Messages passing down a direct connection to the TravelWeb Internet booking engine are routed to the Cisco switch, which passes them on to MARSHA. The MARSHA system checks its room inventory data base and formulates a response, just as though it was a regular Cisco/TravelWeb reservation message. However, in this case the response is routed back to the Marriott Internet Web servers which route the

message to the consumer... The beauty of this approach is that it maintains the stand-alone integrity of Thisco and TravelWeb. Neither of these systems needs to hold a data base of rates or rooms. **All data and inventory records continue to be held by MARSHA. This is an important point because it eliminates any problems that would undoubtedly arise from duplicating Marriott's hotel information on other servers.** Another benefit is that it saves Marriott from having to develop a complex and costly booking interface to MARSHA.” Ex. 1021 at 229-231.

344. Additionally, Nokia and Digester disclose the use of wireless handheld devices for displaying world wide web pages. Ex 1022 at 1076; Ex. 1023 at pp. 61-65.

345. It would have been obvious to one of ordinary skill in the art that the Nokia 9000i Communicator and the wireless handheld devices disclosed in Digester could have been used to access the web pages of the Travel Web site.

b. a. a central database containing hospitality applications and data,

346. The communications system utilized by Marriott for hotel reservations includes a central database containing hospitality applications and data including the MARSHA III computerized reservation system and the storage device associated with the MARSHA system.

347. “Marriott has been highly successful in using technology to market and sell hotel rooms and related services to customers around the world. The cornerstone of this distribution activity is Marriott’s central reservation system, MARSHA (you can find more information on MARSHA in Marriott’s interconnection to GDSs in Chapter 3.... However, when an Internet user wishes to view availability or make a booking, the server routes the enquiry via a third route – a direct connection to TravelWeb. Messages passing down a direct connection to the TravelWeb Internet booking engine are routed to the Cisco switch, which passes them on to MARSHA. The MARSHA system checks its room inventory data base and formulates a response, just as though it was a regular Cisco/TravelWeb reservation message. However, in this case the response is routed back to the Marriott Internet Web servers which route the message to the consumer.... The beauty of this approach is that it maintains the stand-alone integrity of Cisco and TravelWeb. Neither of these systems needs to hold a data base of rates or rooms. All data and inventory records continue to be held by MARSHA. This is an important point because it eliminates any problems that would undoubtedly arise from duplicating Marriott’s hotel information on other servers. Another benefit is that it saves Marriott from

having to develop a complex and costly booking interface to MARSHA.” Ex.

1021 at 229-231.

**c. b. at least one wireless handheld computing device on
which hospitality applications and data are stored,**

348. The Nokia 9000i Communicator discloses a wireless handheld computing device with a web browser. Ex. 1023 at pp. 61-65

349. Digestor discloses wireless handheld devices such as the Nokia 9000i cell phone, the Sony MagicLink, the Apple Newton with the AppPen NetHopper browser, and the Sharp MI-10.

350. It would have been obvious to a POSITA to configure the Travel Web server to modify web pages for the smaller screen size of a wireless hand-held device in view of Digestor. A POSITA would understand that Travel Web pages being rendered by a browser on a handheld device are data and hospitality applications within the meaning of the '325 patent. This is because the combination of the HTML files associated with the Travel Web pages and the browser together comprise “sequences of instructions that can be executed on a computer that are designed to help people perform a certain type of work,” in this case making reservations. Additionally, a POSITA would understand that web pages such as the Travel Web pages include data, and the requirement in claim 11 that the Web page have hospitality applications and data stored thereon further

supports the conclusion that Travel Web pages being rendered by a browser on a handheld device are data and hospitality applications.

d. c. at least one Web server on which hospitality applications and data are stored,

351. The communications system utilized by Marriott for hotel reservations includes a Travel Web server on which hospitality applications and data are stored.

352. “The TravelWeb Internet server is linked by high speed telecommunications lines to Cisco’s Ultraswitch computer (see Pegasus in Chapter 4 for more details on this major hotel industry switch). It is through this link that consumers can book a hotel room from 14,000 properties that are part of 16 chains. The actual booking process is carried out between the consumer and the hotel chain’s computer system, with no intermediate GDS involved at all. This seamless connectivity is about as close to a direct point-of-sale relationship with a prospective guest that a hotel could reasonably expect to achieve. Once a booking has been made, consumers may choose to guarantee their rooms by using TravelWeb’s on-line plastic card authorization facility. TravelWeb therefore provides its participating hotel customers with a truly on-line confirmed booking service that is available to customers all around the world.” Ex. 1021 at 218-19.

353. “One of the other main functions of the TravelWeb server is to act as a translator between: (a) classical text-based computer systems that support

TravelWeb's host suppliers; and (b) the Internet's HTML to which all Internet users are connected. **This translation function allows TravelWeb's host suppliers to communicate directly with the PCs of home and business consumers around the world.**" Ex. 1021 at 218.

354. Digester discloses a server that automatically re-authors documents for display on small screen devices. Ex. 1022 at 1076.

355. A POSITA would have understood that the Travel Web server pages are hospitality applications and data for the reasons discussed above in connection with claim element 11.b discussed above at ¶¶ 348-50.

e. d. at least one Web page on which hospitality applications and data are stored,

356. The communications system utilized by Marriott for hotel reservations includes consumer devices such as PCs (personal computers) on which hospitality applications and data in the form of Travel Web pages rendered by a browser are stored.

357. "One of the other main functions of the **TravelWeb server** is to act as a translator between: (a) classical text-based computer systems that support TravelWeb's host suppliers; and (b) the Internet's HTML to which all Internet users are connected. **This translation function allows TravelWeb's host**

suppliers to communicate directly with the PCs of home and business consumers around the world.” Ex. 1021 at 218.

358. A POSITA would have understood that Travel Web pages being rendered by a browser on a handheld device are data and hospitality applications within the meaning of the '325 patent for the reasons discussed above in connection with claim element 11.b discussed above at ¶¶ 348-50.

f. e. an application program interface, and

359. The communications system utilized by Marriott for hotel reservations includes a THISCO switch. Inkpen at Fig. 5.36. The THISCO switch includes an API for communicating with other applications: “On the demand side, the THISCO switch communicates with all major GDSs using the proprietary message format of each one.” Ex. 1021 at 164, col. 1, ll. 15-18.

360. A POSITA would have considered the software in the THISCO switch that communicates with all major GDSs using their proprietary message formats to constitute or include an application program interface for interfacing with the GDSs.

g. f. a communications control module,

361. The communications system utilized by Marriott for hotel reservations includes a THISCO switch. Ex. 1021 at Fig. 5.36. The THISCO switch is also referred to as Ultraswitch.

362. “The required solution would support the development of a single interface linking each hotel system to the **common switch**. On the distribution side of the switch, a standard GDS link would be developed that could be shared by all hotel participants. **Thisco** was formed in 1988 when 15 major hotel companies, including **Utell International**, Hyatt, Forte, Marriott, as well as most other leading hotel companies in the USA together with Murdoch Electronic Publishing (which later became Reed Travel Group), agreed to invest in a hotel industry switching company.” Ex. 1021 at 163-164.

363. “The newly formed Thisco developed a computerized switch called **Ultraswitch**. The way this switch works is very much like a transparent link between the travel agent and the participating hotel. The switch has a supply and demand side. On the supply side, it connects to hotel inventory systems and translates their messages and commands into a standard Thisco format that is used for all processing within Ultraswitch. On the demand side, the Thisco switch communicates with all major GDSs using the proprietary message format of each one. In many ways the Ultraswitch computer acts as a sort of super-translator between the various hotel systems and the major GDSs. It provides full support for all GDS hotel functionality, including bookings, status messages, rate updates and seamless availability.” Ex. 1021 at 164.

364. **“Ultraswitch** uses technology based on a scalable client/server computer running the UNIX operation system and a relational data base management system (RDMS). It uses high speed digital data circuits carrying between 56 and 64 kb/s of data and supports many different telecommunications protocols including SNA, X25, SLC and TCP/IP.” Ex. 1021 at 164.

365. “Once the travel agent has selected a property for a customer, stage two commences. This involves the creation of a booking request entry by the travel agent, using the GDS terminal. The resulting reservations message is transmitted from the GDS, via the **Ultraswitch** to the hotel system. When the reservation message is received by the hotel system, it checks the required availability and sends a response back to the travel agent via the **Ultraswitch** and the GDS. This two-way message flow continues until either a booking is made or the travel agent sign-off, i.e. the transaction is ended.” Ex. 1021 at 164.

366. “The primary role of TravelWeb is to provide the technologically sophisticated traveller with a full-scale travel service via the Internet. Hotel bookings are serviced on a one-to-one basis with the consumer using **Thisco’s Ultraswitch technology** to link him/her directly to the hotel system of his/her choice. Airline ticket sales are fulfilled with the participation of a USA based travel agent.” Ex. 1021 at 216.

367. “TravelWeb first appeared on the Internet in October 1994 when it was positioned as an online catalogue of hotel products aimed at the travel industry. In December 1995 a pilot version of the hotel booking engine was Beta tested by a controlled group of Internet users. This was the first time that **Thisco’s Ultraswitch hotel booking system** had been connected to the Internet.” Ex. 1021 at 216.

368. “**The hotel booking engine** The TravelWeb Internet server is linked by high speed telecommunications lines to **Thisco’s ultraswitch computer** (see Pegasus and Chapter 4 for more details on this major hotel industry switch). It is through this link that consumers can book a hotel room from 14,000 properties that are part of 16 chains. The actual booking process is carried out between the consumer and the hotel chain’s computer system, with no intermediate GDS involved at all. This seamless connectivity is about as close to a direct point-of-sale relationship with a prospective guest that a hotel could reasonably expect to achieve. Once a booking has been made, consumers may choose to guarantee their rooms by using TravelWeb’s on-line plastic card authorization facility. TravelWeb therefore provides its participating hotel customers with a truly on-line confirmed booking service that is available to customers all around the world.” Ex. 1021 at 218-219.

369. “The Cisco switch (which is explained in more detail in Chapter 4 in the section on distribution systems), was designed with an in-built capability to handle both TPF links to hotel systems and, via its Travel Web booking engine, TCP/IP for Internet traffic.” Ex. 1021 at 230.

370. Nothing in claim 11 requires the communications module to be comprised of a single physical device. In any event, although THISCO chose to implement the Ultraswitch and the Travel Web server as separate devices connected by high speed communications lines, it would have been obvious to a POSITA at the time of the '850 patent that this was a design choice and that the Ultraswitch and the Travel Web server could have been implemented as a single device. A POSITA would have been motivated to do so in order to avoid the cost and complexity of the high speed phone lines that linked the Ultraswitch and the Travel Web server. Additionally, the final citation in chart above from Inkpen at 230 suggests to a POSITA implementation of the THISCO Ultraswitch and Travel Web server as a single system.

- h. 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;**

371. In the communications system utilized by Marriott for hotel reservations, reservations information is maintained in the MARSHA system and distributed to Web pages on PCs or handheld devices.

372. “Marriott has been highly successful in using technology to market and sell hotel rooms and related services to customers around the world. The cornerstone of this distribution activity is Marriott’s central reservation system, MARSHA (you can find more information on MARSHA in Marriott’s interconnection to GDSs in Chapter 3).... However, when an Internet user wishes to view availability or make a booking, the server routes the enquiry via a third route – a direct connection to TravelWeb. Messages passing down a direct connection to the TravelWeb Internet booking engine are routed to the Cisco switch, which passes them on to MARSHA. The MARSHA system checks its room inventory data base and formulates a response, just as though it was a regular Cisco/TravelWeb reservation message. However, in this case the response is routed back to the Marriott Internet Web servers which route the message to the consumer... The beauty of this approach is that it maintains the stand-alone integrity of Cisco and TravelWeb. Neither of these systems needs to hold a data base of rates or rooms. All data and inventory records continue to be held by MARSHA. This is an important point because it eliminates any

problems that would undoubtedly arise from duplicating Marriott's hotel

information on other servers. Another benefit is that it saves Marriott from having to develop a complex and costly booking interface to MARSHA.” Ex. 1021 at 229-231.

373. It would have been obvious to a POSITA that when a PC and a wireless handheld device are both connected to the Travel Web server and viewing pages for the same hotel property, the reservations data maintained on MARSHA would be synchronized (as that term is properly construed) between MARSHA, the Travel Web server, and the Travel Web pages rendered on PCs and the wireless handheld devices such as the Nokia 9000i.

i. wherein the application program interface enables integration of outside applications with the hospitality applications and

374. The THISCO switch includes an API for communicating with other applications: “On the demand side, the THISCO switch communicates with all major GDSs using the proprietary message format of each one.” Ex. 1021 at 164, col. 1, ll. 15-18.

375. The software in the Thisco switch that accepts messages from the major GDSs in their respective proprietary message formats are applications program interfaces (i.e., they are interfaces to the application programs running on the respective GDSs). The API enables integration of the outside applications with

the hospitality applications in that the API allows the other applications to make room reservations via the MARSHA system and such reservations will be reflected in MARSHA as well as on the Travel Web server and Web pages downloaded to customer PCs and wireless handheld devices.

j. wherein the communications control module is an interface between the hospitality applications and any other communications protocol,

376. In the communications system utilized by Marriott for hotel reservations, the Travel Web internet booking engine of the THISCO switch is an interface between the TCP/IP protocol employed by the hospitality applications on the Travel Web server, the Web page on the PC and the wireless handheld devices and the protocol employed by the MARSHA CRS.

377. "Its MARSHA system is based on operating software called transaction processing facility (TPF), which runs on an IBM mainframe. This is totally incompatible with the TCP/IP communications protocols used by the Internet.... To build its own Internet booking engine with an on-line interface to MARSHA could be done from a technical viewpoint, however, it would be quite costly.... So, in the meantime, what was the answer to Marriott's Internet book problem? Well, the answer was a very pragmatic decision taken by Marriott management, which was to use the Thisco hotel switch as the interface to MARSHA. The Thisco switch (which is explained in more detail in Chapter 4 in

the section on distribution systems), was designed with an in-built capability to handle both TPF links to hotel systems and, via its Travel Web booking engine, TCP/IP for Internet traffic.” Ex. 1021 at 230.

k. wherein the synchronized data relates to orders.

378. Inkpen discloses the synchronized data relating to orders of hotel rooms, *i.e.* hotel bookings.

379. **“The hotel booking engine** The TravelWeb Internet server is linked by high speed telecommunications lines to **Thisco’s ultraswitch computer** (see Pegasus and Chapter 4 for more details on this major hotel industry switch). It is through this link that consumers can book a hotel room from 14,000 properties that are part of 16 chains. The actual booking process is carried out between the consumer and the hotel chain’s computer system, with no intermediate GDS involved at all. This seamless connectivity is about as close to a direct point-of-sale relationship with a prospective guest that a hotel could reasonably expect to achieve. Once a booking has been made, consumers may choose to guarantee their rooms by using TravelWeb’s on-line plastic card authorization facility. TravelWeb therefore provides its participating hotel customers with a truly on-line confirmed booking service that is available to customers all around the world.” Ex. 1021 at 218-219.

380. A POSITA would have understood that hotel bookings are orders of hotel rooms.

2. Claim 13.

- a. An information management and synchronous communications system for use with wireless handheld computing devices and the internet comprising:**

381. The analysis for this claim element is the same as set forth above at ¶¶ 341-45 because the claim language is identical.

- b. a. a central database containing hospitality applications and data,**

382. The analysis for this claim element is the same as set forth above at ¶¶ 346-47 because the claim language is identical.

- c. b. at least one wireless handheld computing device on which hospitality applications and data are stored,**

383. The analysis for this claim element is the same as set forth above at ¶¶ 348-50 because the claim language is identical.

- d. c. at least one Web server on which hospitality applications and data are stored,**

384. The analysis for this claim element is the same as set forth above at ¶¶ 351-55 because the claim language is identical.

- e. d. at least one Web page on which hospitality applications and data are stored,**

385. The analysis for this claim element is the same as set forth above at ¶¶356-58 because the claim language is identical.

f. e. an application program interface, and

386. The analysis for this claim element is the same as set forth above at ¶¶359-60 because the claim language is identical.

g. f. a communications control module,

387. The analysis for this claim element is the same as set forth above at ¶¶361-70 because the claim language is identical.

h. 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;

388. The analysis for this claim element is the same as set forth above at ¶¶371-73 because the claim language is identical.

i. wherein the application program interface enables integration of outside applications with the hospitality applications and

389. The analysis for this claim element is the same as set forth above at ¶¶374-75 because the claim language is identical.

j. wherein the communications control module is an interface between the hospitality applications and any other communications protocol,

390. The analysis for this claim element is the same as set forth above at ¶¶376-77 because the claim language is identical.

k. wherein the synchronized data relates to reservations.

391. Inkpen discloses the synchronized data relating to hotel reservations.

392. “The beauty of this approach is that it maintains the stand-alone integrity of Thisco and TravelWeb. Neither of these systems needs to hold a data base of rates or rooms. All data and inventory records continue to be held by MARSHA. This is an important point because it eliminates any problems that would undoubtedly arise from duplicating Marriott’s hotel information on other servers. Another benefit is that it saves Marriott from having to develop a complex and costly booking interface to MARSHA.” Ex. 1021 at 229-231.

3. Claim 15.

a. The information management and synchronous communications system of claims 11, 12, or 13:

393. See the disclosures and related commentary to claims 11 or 13 discussed above as discussing the information management and synchronous communications system from claims 11 or 13.

b. wherein the data is sent to a wireless paging device.

394. Nokia and Digestor disclose the use of wireless handheld devices for receiving data from an information management and synchronous communications system. Ex 1022 at 1076; Ex. 1023 at pp. 61-65.

395. It would have been obvious to one of ordinary skill in the art that the Nokia 9000i Communicator and the wireless handheld devices disclosed in Digestor could have been used as wireless paging devices to receive the data from the information management and synchronous communications system of claims 11, 13, or 15. Ex. 1022 at 1080.

396. It is my opinion therefore that claims 11, 13, and 15 are rendered obvious by Inkpen in light of Nokia and Digestor.

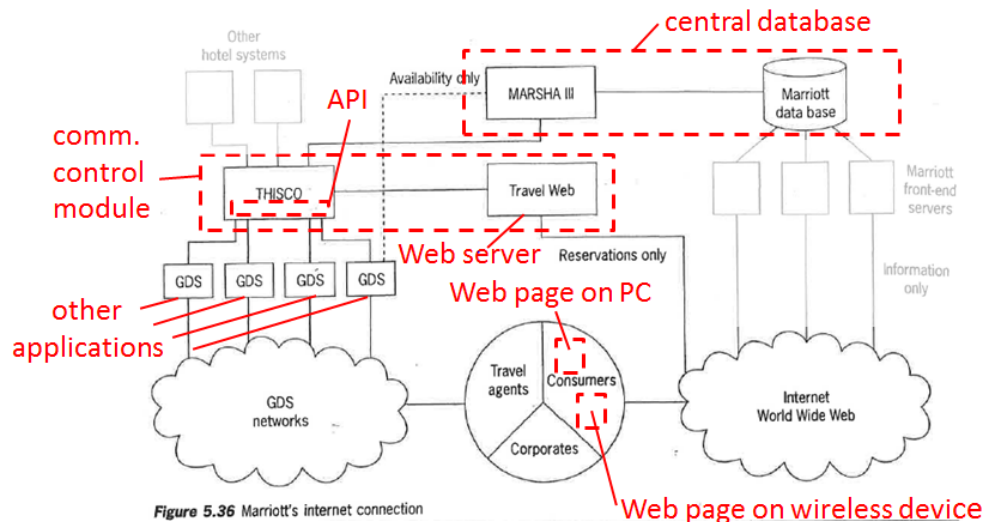
B. Obviousness of Claim 12 Based on Inkpen, Nokia, Digestor, and Flake.

397. It is my understanding that there are many legal bases under which two prior art references could be combined. It is my opinion that a person of ordinary skill in the art would have found it obvious to combine the system of Inkpen with the techniques and environment of Digestor, Nokia, and Flake because it would be combining use of known techniques to improve a similar device in the same way.

398. As discussed above, Inkpen teaches a book length survey of several known travel information systems. Although several such information systems are disclosed, for purposes of the Petition, the information system developed by Marriott will be the focus. The Marriott system serves as a system that handles hotel reservations over the internet through using a Travel Web server. The

Travel Web server may be used by consumers to make reservations. *Id.* at 218, col.1, lines 35-40. In addition to the Travel Web server, a user may also connect to one of Marriott's front end servers to access the Marriott.com website, which were new as of 1996. *Id.* at 229, col. 2, lines 37-43. A user can get certain information via the Marriott.com website (*e.g.*, room rates, property descriptions, hotel addresses), but can only check availability and make reservations via a connection through the Marriott server to the Travel Web site to the THISCO switch and then to MARSHA. *Id.* at 230, col. 1, line 44- col. 2, line 49.

399. Inkpen maps on to the '850 patent as illustrated below:



400. Digestor teaches “a software system which automatically re-authors arbitrary documents from the world-wide web to display on small screen devices such as PDAs and cellular phones, providing device independent access to the

web.” Ex. 1022 at Abstract. Digestor discloses four approaches for formatting documents for small screens, including: (1) device-specific authoring, (2) multiple-device authoring, (3) client-side navigation, and (4) automatic re-authoring. *Id.* at 1076. Automatic re-authoring, can be performed at either the server, the client, or an intermediate device. *Id.*

401. Nokia discloses a web-capable mobile device. Nokia is an owner’s manual for the Nokia 9000i Communicator. Ex. 1023 at 7. The Nokia 9000i Communicator, specifically mentioned in Digestor (Ex. 1022 at 1075), includes “a mobile phone, messaging device, Internet access terminal, and palmtop organizer all in one compact unit” with the phone interface on the device cover and the other interfaces under the device cover. The 9000i Communicator included a web browser for viewing world wide web pages, including HTML web pages. *Id.* at 63.

402. In addition, wireless handheld devices that had wireless internet access and a web browser capable of rendering web pages include the Nokia 9000i Communicator, Samsung Duett, Sharp TQ-G700, Sharp MI-10, and the Novatel Contact. At the Critical Date of the Patents, there were a number of well-known, commercially available portable computing devices such as cellular phones, PDAs and handheld computers such as the Apple Newton MessagePad, SONY

MagicLink, Windows CE devices from Compaq, Casio and NEC; various Palm Computing PDAs; as well as a number of devices from Nokia and Motorola. These devices all supported the use of Web browsers including such browser applications as NetHopper, MagicLink, Top Gun Wingman, and Microsoft Mobile Explorer. These handheld device browsers would be well-known to a POSITA and were being created, discussed and improved upon as early as 1994.

403. Flake discloses an automated travel service information management system for use by a travel agent to manage travel services for a customer. Ex. 1049 at 4. Flake's system includes a relational database that includes all pertinent information from the customer's profile. *Id.* Flake's system can aggregate data from a plurality of computer reservations systems. *Id.* Flake discloses the concept of a waitlist for a travel services that are currently sold out. *Id.* at 21. The concept of a waitlist for travel providers such as hotels and airlines was well known in the art prior to the filing of the '325 patent.

404. It is my opinion that it would have been obvious to a POSITA to combine Inkpen, Nokia, Digestor, and Flake by using the Nokia 9000i Communicator device disclosed in Nokia to access Travel Web pages such as those disclosed in Inkpen to make, e.g., hotel reservations, as well as waitlists from Flake. It should be noted that claim 11, on which claim 12 depends, does not

require any reformatting of any menus or other data for a smaller screen on a wireless handheld device, do not require that the wireless handheld device utilize a hospitality application different from a Web page rendered by a browser and do not otherwise preclude the hospitality application on the wireless handheld device from being a Web page rendered by a browser. Thus, the “wireless handheld device” limitations of claim 11 would be satisfied by a handheld device that had wireless internet access and a web browser capable of rendering the pages on the Travel Web site. Such devices include the Nokia 9000i Communicator (Ex. 1023 at 61) as well as Samsung Duett, Sharp TQ-G700 and Sharp MI-10 (Ex. 1022 at 1075), and the Novatel Contact (Ex. 1065 at 52). A POSITA would have further found it obvious to incorporate the waitlist concept of Flake into the travel information system disclosed in Inkpen because the hospitality industry typically utilizes waitlists in performing their industry services.

405. It is my opinion that it would have been obvious to a person of ordinary skill in the art to combine the prior art elements of Inkpen, Digestor, Nokia, and Flake. Such a combination would have been a use of a known technique to improve a similar device in the same way because it simply would have integrated the functionality of the methods of performing web-based transactions. Such methods are well within the grasp of one of skill in the art and

would easily be recognized as ways to implement such a system. The references address the problem of performing hospitality transactions, particularly in the web environment.

406. It is my opinion that a person of ordinary skill in the art would find that Inkpen in view of Digestor, Nokia, and Flake renders obvious each and every element of claim 15.

1. Claim 12.

- a. An information management and synchronous communications system for use with wireless handheld computing devices and the internet comprising:**

407. The analysis for this claim element is the same as set forth above at ¶¶ 341-45 because the claim language is identical.

- b. a central database containing hospitality applications and data,**

408. The analysis for this claim element is the same as set forth above at ¶¶ 346-47 because the claim language is identical.

- c. b. at least one wireless handheld computing device on which hospitality applications and data are stored,**

409. The analysis for this claim element is the same as set forth above at ¶¶ 348-50 because the claim language is identical.

d. c. at least one Web server on which hospitality applications and data are stored,

410. The analysis for this claim element is the same as set forth above at ¶¶ 351-55 because the claim language is identical.

e. d. at least one Web page on which hospitality applications and data are stored,

411. The analysis for this claim element is the same as set forth above at ¶¶ 356-58 because the claim language is identical.

f. e. an application program interface, and

412. The analysis for this claim element is the same as set forth above at ¶¶ 359-60 because the claim language is identical.

g. f. a communications control module,

413. The analysis for this claim element is the same as set forth above at ¶¶ 361-70 because the claim language is identical.

h. 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;

414. The analysis for this claim element is the same as set forth above at ¶¶ 371-73 because the claim language is identical.

i. wherein the application program interface enables integration of outside applications with the hospitality applications and

415. The analysis for this claim element is the same as set forth above at ¶¶ 374-75 because the claim language is identical.

j. wherein the communications control module is an interface between the hospitality applications and any other communications protocol,

416. The analysis for this claim element is the same as set forth above at ¶¶ 376-77 because the claim language is identical.

k. wherein the synchronized data relates to waitlists.

417. Flake discloses an automated travel information system for travel services, including hotels. Flake at 6. Flake further discloses the use of a waitlist for travel services that are not currently available. Ex. 1049 at 21.

418. Flake discloses the use of wait lists for travel services that are not currently available. Ex. 1049 at 21. Thus, it would have been obvious to a POSITA to incorporate the wait list concept into the computerized reservation system of Inkpen to provide a waitlist for hotel rooms that are sold out.

C. Obviousness of Claims 11, 13, and 15 Based on DeLorme.

419. DeLorme teaches a system for making travel arrangements and planning travel activities, called Travel Reservation and Information Planning Systems, or TRIPS. *See, e.g.* Ex. 1024 at 1:28-36; 14:24-42. The TRIPS system is

a “completely integrated system enabling an individual to plan, review, locate, schedule and select or execute customized or personalized travel arrangements and activities in association with map displays or other output of travel routes, chronological events, diverse travel topics and geographic points of interests along such routes.” Ex. 1024 at 1:32-43.

420. In the TRIPS system, travel and planning related data and information are stored in a centralized relational database. *Id.* at 17:7:13; *see also* 32:1-7. The TRIPS system can be accessed by users using a variety of different types of devices using various communications protocols. For example, DeLorme discloses that the TRIPS system may be accessed “entirely online” by means of an Internet web site. *Id.* at 14:43-47. Alternatively, the TRIPS system may be accessed by users “on the go” using wireless communication units, such as wireless handheld devices. *Id.* at 72:13-19; 71:61-72:2. DeLorme discloses that whether the user accesses the system online or via a wireless handheld device, the user can access updated (*i.e.*, synchronized) “real time” or “on the spot” travel information. *Id.* at 14:24-42; 72:37-43.

421. It is my opinion that DeLorme renders claims 11, 13, and 15 obvious.

1. **Claim 11.**

a. **An information management and synchronous communications system for use with wireless handheld computing devices and the internet comprising:**

422. DeLorme discloses an information management and synchronous communications system for making travel arrangements and planning travel activities, called Travel Reservation and Information Planning Systems, or TRIPS. *See, e.g.* Ex. 1024 at 1:28-36; 14:24-42.

423. DeLorme discloses that users may interact with updated TRIPS data using the internet or a wireless handheld computing device.

424. “Alternatively, all TRIPS functions, data and services can be provided entirely online (i.e. without significant stand-alone software components)—for example, from a central TRIPS service bureau, **or by means of a TRIPS Internet World Wide Web Site.** *Id.* at 14:43-47.

425. “FIG. 9 illustrates an important alternative or additional embodiment of TRIPS—that permits mobile users 901, at remote locations (for example, en route in vehicles or on foot), two-way access by wireless communications 903 to engage the novel travel reservation information planning system of one or more TRIPS 904 communications facilities or service bureaus. FIG. 9 includes **a**

wireless communication unit or WCU 907, typically hand-held 906 or mounted or used in a vehicle 905 like an automobile.” *Id.* at 71:61-72:2.

b. a. a central database containing hospitality applications and data,

426. DeLorme discloses a relational database for storing TRIPS hospitality data.

427. “Preferred TRIPS embodiments respond with interactive processing to these "user friendly" travel planning inquiries by sets of operations or sequences of functions which retrieve, focus, and integrate characteristic travel information within TRIPS Subsystems for processing geographical, topical, temporal and accounting data records organized as a **state-of-the-art relational database.**” Ex. 1024 at 17:7:13; *see also* 32:1-7.

428. DeLorme further discloses that the TRIPS database includes hospitality applications, such as software for managing hospitality data in the TRIPS database: “FIG. 3 is a simplified representation of the preferred data structure for storage, retrieval and processing of the characteristic species TRIPS travel information—i.e. for the **software management of geographic, temporal, topical and/or transactional records in TRIPS.**” *Id.* at 30:58-65; *see also* 8:23-32 (describing GIS applications).

c. b. at least one wireless handheld computing device on which hospitality applications and data are stored,

429. DeLorme discloses a handheld wireless communication unit (WCU) 907 for accessing TRIPS hospitality data and applications.

430. “FIG. 9 illustrates an important alternative or additional embodiment of TRIPS—that permits mobile users 901... to engage the novel travel reservation information planning system of one or more TRIPS 904 communications facilities or service bureaus. FIG. 9 includes **a wireless communication unit or WCU 907, typically hand-held 906** or mounted or used in a vehicle 905 like an automobile.”
Ex. 1024 at 71:61-72:2.

431. “TRIPS WCUs 907 facilitate two way communications at 903 of standard TRIPS data packets 939 with at least one TRIPS travel information and service 15 provider 904. In sum, FIG. 9 outlines embodiments of the TRIPS invention **enabling users to get travel information and/or make travel arrangements "on the go,"** walking in a city, from their vehicle, during an off-road expedition and so forth.” *Id.* at 72:13-19; *see also id.* at 18:35-42.

d. c. at least one Web server on which hospitality applications and data are stored,

432. DeLorme discloses TRIPS data and applications available online via a World Wide Web Site.

433. “Alternatively, all TRIPS function, data and service can be provided entirely online_(i.e. without significant standalone software components)—for

example, from a central TRIPS service bureau, or by means of a **TRIPS Internet World Wide Web Site**.” Ex. 1024 at 14:43-47.

434. “Preferred online TRIPS embodiments—such as **an Internet travel reservation information planning system**—are designed to facilitate flexible and independent user consideration and manipulation of travel information in association with dates/times in order to construct and/or modify personalized itineraries or travel schedules...” *Id.* at 51:13-22.

e. d. at least one Web page on which hospitality applications and data are stored,

435. DeLorme discloses TRIPS data and applications available online via a World Wide Web Site.

436. “Alternatively, all TRIPS function, data and service can be provided entirely online (i.e. without significant standalone software components)—for example, from a central TRIPS service bureau, or by means of a **TRIPS Internet World Wide Web Site**.” Ex. 1024 14:43-47.

437. DeLorme further discloses using distributed applications, such as Java “applets,” on Web pages to provide TRIPS hospitality functionality: “Such purely online TRIPS embodiments can be implemented utilizing recent advances in **distributed applications, "agents" or online "applets" developed in Java, or**

equivalent computer languages—plus other state-of-the-art software enhancements for online or Internet usage.” *Id.* at 14:47-52.

f. e. an application program interface, and

438. DeLorme discloses an application program interface through its disclosure of Provider Input/Output 231 for integrating third party applications with TRIPS.

439. “Preferably, **TRIPS 203 further offers/brokers Provider Input/Output 231 to and from third-party providers of travel information and services – optimally in real time online.** Such third party participation online enables enrolled TRIPS users to enjoy more immediate offerings, such as updated information on accommodations availability i.e. vacancies, special offers for price discounts or extra services, reservations and/or tickets for diverse accommodations or events and so forth – as described in more detail hereinafter, particularly referring to FIG. 8.” Ex. 1024 at 31:42-51.

440. DeLorme further discloses the Accounting Subsystem as comprising software and communication links for integrating accounting, billing and other services: “These transactions are negotiated, consummated, recorded, confirmed, accounted for, and as appropriate, charged, invoiced and/or reconciled within the TRANSACTION COMMUNICATIONS ACCOUNTING MANAGER block—at 816 in FIG. 8A—by means of state-of-the-art **software and communication links**

for electronic commerce or online contracts, related accounting, billing, or customer services, and so forth.” *Id.* at 64:37-44; *see also id.* at 63:61-67; 50:45-48.

g. f. a communications control module,

441. DeLorme discloses a communications control module in its disclosure that the TRIPS system communicates with different end-user devices using different communication protocols.

442. **“TRIPS can also work with alternative end-user hardware platforms**; e.g., networked work stations; "kiosk" information terminals linked to a central server; portable laptop, notebook, in-vehicle, or handheld personal digital assistant (PDA) portable computer devices.... TRIPS can also be provided via "smart Cable TV" interfaces that combine simplified PC functionality, input/output with a mass-market "home" television appliance....” Ex. 1024 at 14:66-15:13.

443. “For convenient use en route, e.g., in a vehicle or on foot, the **WCU 907 preferably provides simplified or "push-button" input means** at 914, 915, 916, 918 and 920, for example to make TRIPS inquiries from a moving car, as described hereinafter.... **The TRIPS service bureau or provider 904 in FIG. 9 receives the simplified input or remote queries**, which get processed by series or

sequences of TRIPS geographic, temporal, topical and accounting operations....”

Id. at 73:26-45; *see also* 73:64-74:29.

444. DeLorme further discloses a communication control module (*i.e.* Interface and Interaction Bus 209 in Fig. 2 or Main Menu 413 and Interaction Bus 414 in Fig. 4) that coordinates communication with different end-user devices: “A TRIPS Retail Consumer Input is shown at 205 in FIG. 2. Retail user input 205 includes travel planning inquiries... **The TRIPS Interface & Interaction Bus 209 functions to furnish flexible user-directed access to, from and among the four Subsystems at 221, 223, 213 and 217 within TRIPS 203.**” *Id.* at 30:67-31:22; *see also* 22:63-66; Fig. 2.

445. “A TRIPS Retail Consumer Input is shown at 205 in FIG. 2. Retail user input 205 includes travel planning inquiries.... **The TRIPS Interface & Interaction Bus 209 functions to furnish flexible user-directed access to, from and among the four Subsystems at 221, 223, 213 and 217 within TRIPS 203.**” *Id.* at 30:67-31:22; *see also* 22:63-66; Fig. 2.

446. “In FIG. 4, **the Main Menu 413 and the Interaction Bus 414 correspond to the TRIPS Interface & Interaction Bus 209 in FIG. 2**—as well as the main input menus at 155, 157, 161 and 163 in FIG. 1C—plus equivalent input means like graphical user interfaces or GUIs. Moreover, the Main Menu 413

and **Interaction Bus 414 in FIG. 4** correspond to, and **coordinate the response to, alternative input means** embedded in specialized TRIPS field or in-vehicle embodiments that typically include the wireless communication of GPS position sensor data along with simplified, "push-button" travel information inquiries sent by users actually en route or at remote locations....” *Id.* at 37:54-67.

447. A POSITA would understand or find obvious that the Interface and Interaction Bus 209 in Fig. 2 or Main Menu 413 and Interaction Bus 414 in Fig. 4 constitute a communications control module that serves as an interface between retail consumer users (e.g. 205 in Fig. 2) and the various subsystems that comprise TRIPS (e.g. Topical Subsystem 213, Accounting Subsystem 217, Geographic Subsystem 221, and Temporal Subsystem 223). A POSITA would further understand or find obvious that the communication control module is configured to interface with retail consumer users using different types of devices using different communication protocols, including both Internet based access (14:66-15:13) as well as access via a “simplified” request protocol from wireless communication devices (73:26-45; 73:67-74:29).

- h. 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;

448. DeLorme discloses that users may view updated real-time TRIPS data via the internet site.

449. “Once online, the preferred embodiment lets the user "view" or download updated TRIPS map data, functions and timely, topical travel information.... When needed, TRIPS user inquiries can be processed online or via computer communications for immediate treatment and response. In sum, **the FIG. 1A preferred embodiment facilitates access to current information and "real-time" services online....**” Ex. 1024 at 14:24-42. *See also* 14:43-47.

450. DeLorme further discloses providing updated TRIPS data to wireless communication units: “FIG. 9 also depicts alternative TRIPS embodiments and remote usage scenarios which facilitate "on the spot" simplified travel planning and transactions, via WCU 907 from remote locations, by retail users actually en route, who have not necessarily engaged in previous desktop TRIPS travel planning sessions, arrangements, output or transfers specifically related to their current trip.... **In other words, FIG. 9 illustrates TRIPS embodiments for immediate travel inquiries and responses to and from TRIPS retail users "on the road" or at remote "field" locations.**” *Id.* at 72:37-43; 72:67-73:6.

i. wherein the application program interface enables integration of outside applications with the hospitality applications and

451. DeLorme discloses Provider Input/Output 231 for integrating third party applications with TRIPS hospitality applications: “Preferably, **TRIPS 203 further offers/brokers Provider Input/Output 231 to and from third-party providers of travel information and services – optimally in real time online.**

Such third party participation online enables enrolled TRIPS users to enjoy more immediate offerings, such as updated information on accommodations availability i.e. vacancies, special offers for price discounts or extra services, reservations and/or tickets for diverse accommodations or events and so forth – as described in more detail hereinafter, particularly referring to FIG. 8.” Ex. 1024 at 31:42-51.

j. wherein the communications control module is an interface between the hospitality applications and any other communications protocol,

452. DeLorme discloses that the TRIPS system communicates with different end-user devices using different communication protocols: “**TRIPS can also work with alternative end-user hardware platforms;** e.g., networked work stations; "kiosk" information terminals linked to a central server; portable laptop, notebook, in-vehicle, or handheld personal digital assistant (PDA) portable computer devices.... TRIPS can also be provided via "smart Cable TV" interfaces

that combine simplified PC functionality, input/output with a mass-market "home" television appliance....” Ex. 1024 at 14:66-15:13.

453. “For convenient use en route, e.g., in a vehicle or on foot, the WCU 907 preferably provides simplified or "push-button" input means at 914, 915, 916, 918 and 920, for example to make TRIPS inquiries from a moving car, as described hereinafter.... The TRIPS service bureau or provider 904 in FIG. 9 receives the simplified input or remote queries, which get processed by series or sequences of TRIPS geographic, temporal, topical and accounting operations....” *Id.* at 73:26-45; *see also* 73:64-74:29.

454. DeLorme further discloses a communication control module (*i.e.* Interface and Interaction Bus 209 in Fig. 2 or Main Menu 413 and Interaction Bus 414 in Fig. 4) that coordinates communication with different end-user devices: “A TRIPS Retail Consumer Input is shown at 205 in FIG. 2. Retail user input 205 includes travel planning inquiries.... The TRIPS Interface & Interaction Bus 209 functions to furnish flexible user-directed access to, from and among the four Subsystems at 221, 223, 213 and 217 within TRIPS 203.” *Id.* at 30:67-31:22; *see also* 22:63-66; Fig. 2.

455. “In FIG. 4, the Main Menu 413 and the Interaction Bus 414 correspond to the TRIPS Interface & Interaction Bus 209 in FIG. 2—as well

as the main input menus at 155, 157, 161 and 163 in FIG. 1C—plus equivalent input means like graphical user interfaces or GUIs. Moreover, the Main Menu 413 and **Interaction Bus 414 in FIG. 4** correspond to, and **coordinate the response to, alternative input means** embedded in specialized TRIPS field or in-vehicle embodiments that typically include the wireless communication of GPS position sensor data along with simplified, "push-button" travel information inquiries sent by users actually en route or at remote locations....” *Id.* at 37:54-67.

456. A POSITA would understand that that the communication control module (*i.e.* Interface and Interaction Bus 209 in Fig. 2 or Main Menu 413 and Interaction Bus 414 in Fig. 4) serves as an interface between retail consumer users (e.g. 205 in Fig. 2) and the various subsystems that comprise TRIPS (e.g. Topical Subsystem 213, Accounting Subsystem 217, Geographic Subsystem 221, and Temporal Subsystem 223). A POSITA would further understand that the communication control module is configured to interface with retail consumer users using different types of devices using different communication protocols, including both Internet based access (14:66-15:13) as well as access via a “simplified” request protocol from wireless communication devices (73:26-45; 73:67-74:29).

k. wherein the synchronized data relates to orders.

457. DeLorme discloses synchronized data relating to orders of services, such as reservations and/or tickets.

458. “Preferably, TRIPS 203 further offers/brokers Provider Input/Output 231 to and from third-party providers of travel information and services – optimally in real time online. Such third party participation online enables enrolled TRIPS users to enjoy more immediate offerings, such as updated information on accommodations availability i.e. vacancies, special offers for price discounts or extra services, reservations and/or tickets for diverse accommodations or events and so forth – as described in more detail hereinafter, particularly referring to FIG. 8.” Ex. 1024 at 31:42-51.

2. Claim 13.

a. An information management and synchronous communications system for use with wireless handheld computing devices and the internet comprising:

459. The analysis for this claim element is the same as set forth above at ¶¶ 422-25 because the claim language is identical.

b. a. a central database containing hospitality applications and data,

460. The analysis for this claim element is the same as set forth above at ¶¶ 426-28 because the claim language is identical.

- c. b. at least one wireless handheld computing device on which hospitality applications and data are stored,**

461. The analysis for this claim element is the same as set forth above at ¶¶ 429-31 because the claim language is identical.

- d. c. at least one Web server on which hospitality applications and data are stored,**

462. The analysis for this claim element is the same as set forth above at ¶¶ 432-34 because the claim language is identical.

- e. d. at least one Web page on which hospitality applications and data are stored,**

463. The analysis for this claim element is the same as set forth above at ¶¶ 435-37 because the claim language is identical.

- f. e. an application program interface, and**

464. The analysis for this claim element is the same as set forth above at ¶¶ 438-40 because the claim language is identical.

- g. f. a communications control module,**

465. The analysis for this claim element is the same as set forth above at ¶¶ 441-47 because the claim language is identical.

- h. 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;**

466. The analysis for this claim element is the same as set forth above at ¶¶ 448-50 because the claim language is identical.

- i. wherein the application program interface enables integration of outside applications with the hospitality applications and**

467. The analysis for this claim element is the same as set forth above at ¶ 451 because the claim language is identical.

- j. wherein the communications control module is an interface between the hospitality applications and any other communications protocol,**

468. The analysis for this claim element is the same as set forth above at ¶¶ 452-56 because the claim language is identical.

- k. wherein the synchronized data relates to reservations.**

469. DeLorme discloses the synchronized data relating to reservations.

470. “Preferably, TRIPS 203 further offers/brokers Provider Input/Output 231 to and from third-party providers of travel information and services – optimally in real time online. Such third party participation online enables enrolled TRIPS users to enjoy more immediate offerings, such as updated information on accommodations availability i.e. vacancies, special offers for price discounts or

extra services, reservations and/or tickets for diverse accommodations or events and so forth – as described in more detail hereinafter, particularly referring to FIG. 8.” Ex. 1024 at 31:42-51; *see also* 21:7-17.

3. Claim 15.

a. The information management and synchronous communications system of claim 11, 12, or 13

471. The analysis for this claim element is the same as set forth above at claims 11 and 13 above because the claim depends on claims 11-13.

b. wherein the data is sent to a wireless paging device.

472. DeLorme discloses communication with a wireless two-way pager.

473. “Various portable devices can perform the functions of the WCU 907-
-e.g. a notebook or laptop personal computer, a personal digital assistant or PDA, a
"smart" cellular phone, two-way pager, an "accessorized" GPS sensor, as well as a
dedicated or specially manufactured appliance, and so forth....” Ex. 1024 at
75:33-45.

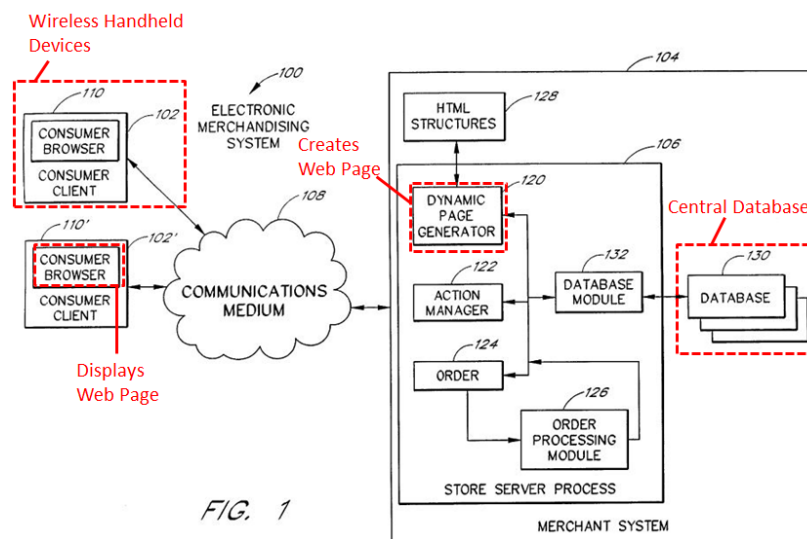
D. Obviousness of Claims 11-13 and 15 Based on Blinn and Inkpen.

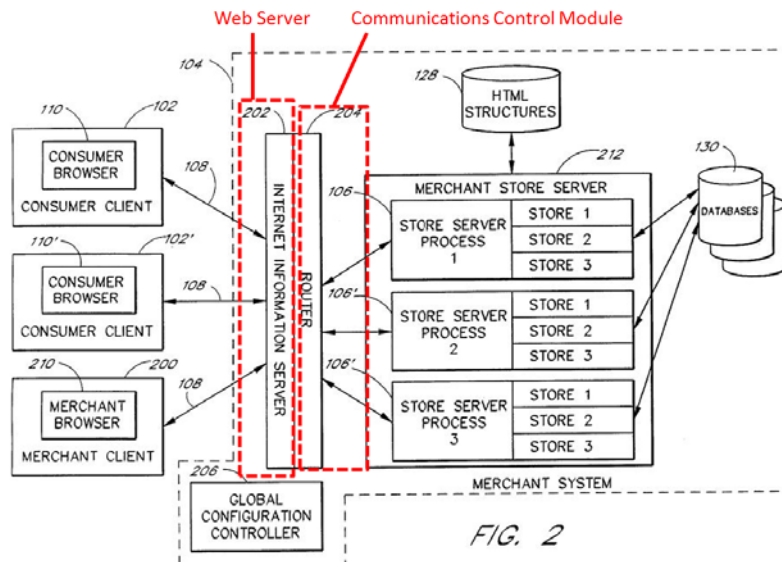
474. It is my understanding that there are many legal bases under which
two prior art references could be combined. It is my opinion that a person of
ordinary skill in the art would have found it obvious to combine the system of

Blinn with the hospitality applications disclosed in Inkpen because it would be combining use of known techniques to improve a similar device in the same way.

475. Blinn teaches a method and system for processing electronic sales transactions. The method and system described in Blinn set forth communications among client devices (including wireless personal digital assistants and standalone computers), the internet, and a merchant system including a database and communications control means.

476. Blinn maps on to the '325 patent according to the following figures:





477. Inkpen teaches a book length survey of several known travel information systems. Although several such information systems are disclosed, for purposes of the Petition, the information system developed by Marriott will be the focus. The Marriott system serves as a system that handles hotel reservations over the internet through using a Travel Web server. The Travel Web server may be used by consumers to make reservations. *Id.* at 218, col.1, lines 35-40. In addition to the Travel Web server, a user may also connect to one of Marriott's front end servers to access the Marriott.com website, which were new as of 1996. *Id.* at 229, col. 2, lines 37-43. A user can get certain information via the Marriott.com website (*e.g.*, room rates, property descriptions, hotel addresses), but can only check availability and make reservations via a connection through the Marriott

server to the Travel Web site to the THISCO switch and then to MARSHA. *Id.* at 230, col. 1, line 44- col. 2, line 49.

478. It is my opinion that it would have been obvious to a person of ordinary skill in the art to combine the prior art elements of Blinn and Inkpen to achieve an online merchant system that includes the capability for online transactions with hospitality applications. Such a combination would have been a use of a known technique to improve a similar device in the same way because it simply would have integrated the functionality of two methods of user interaction including online sales of specific types, such as hospitality applications. Such methods are well within the grasp of a programmer and would easily be recognized as ways to implement such a system. For instance, Blinn's describes the capability to modify the application based on a "merchant's unique sales transactions," which a POSITA would understand could include hospitality-specific transactions. *See* Ex. 1025 at 38:43-47; *see also* 1:11-18, 1:30-38, 4:66-5:3. Indeed, in Blinn, the inventors identified in a preferred embodiment the flexibility to include adaptable electronic orders for different sales situations. Ex. 1025 at 1:67-2:3. Additionally, as discussed above, Inkpen discloses hospitality applications and data for use in its MARSHA computerized reservation system, and a POSITA would have found it obvious to include the hospitality applications from Inkpen/MARSHA into the

system disclosed by Blinn to permit Blinn to function with hospitality applications. Both references address the problem of web based transactions.

479. It is my opinion that a person of ordinary skill in the art would find that Blinn in view of Inkpen renders obvious each and every element of claims 11-13 and 15.

1. Claim 11.

a. An information management and synchronous communications system for use with wireless handheld computing devices and the internet comprising:

480. Blinn discloses a system for processing electronic sales transactions through using an information management and synchronous communications system which uses wireless handheld computing devices and the internet.

481. “The present invention provides a method and system for processing electronic sales transactions. In a preferred embodiment, an electronic merchandising system allows merchants to create electronic orders which are easily adaptable for different sales situations.” Ex. 1025 at Abstract.

482. “Focusing now on the communications medium 108 as shown in FIG. 2, the presently preferred communications medium 108 includes the Internet which is a global network of computers. The structure of the Internet, which is well

known to those of ordinary skill in the art, includes a network backbone with networks branching from the backbone.” Ex. 1025 at 9:10-16.

483. “In other embodiments, the consumer computer 102 could, for example, be a computer workstation, a local area network of computers, an interactive television, an interactive kiosk, a personal digital assistant, an interactive wireless communications device or the like which can interact with the communications medium 108.” Ex. 1025 at 10:9-14; *see also* Ex. 1025 at Abstract; Figs. 1, 2 at 102 and 108; 9:11-12; 10:12-14; 13:36-43.

b. a. a central database containing hospitality applications and data,

484. Blinn discloses a database, identified as 130 in Figures 1 and 2, hosted by a centralized merchant system computer that includes hospitality applications and data on store server process 106.

485. “[T]he store server process 106 is in communication with one or more databases 130 with a database module 132.” Ex. 1025 at 8:9-11.

486. “The merchant system 104 includes an internet information server 202, a router 204, a global configuration controller 205, at least one merchant store server 212, a storage medium for HTML structures 128 and one or more databases 130.” Ex. 1025 at 11:31-41; *see also* Figs. 1 and 2 at 130.

487. Inkpen discloses a central database including the MARSHA computerized reservation system that includes a database that stores reservation records. Ex. 1021 at Figure 5.36 and pp. 230-31.

488. It would have been obvious to a POSITA that the database 130 could contain hospitality applications and data. For instance, Blinn's describes the capability to modify the application based on a "merchant's unique sales transactions," which a POSITA would understand could include hospitality-specific transactions. *See* Ex. 1025 at 38:43-47; *see also* 1:11-18, 1:30-38, 4:66-5:3. Indeed, in Blinn, the inventors identified in a preferred embodiment the flexibility to include adaptable electronic orders for different sales situations. *Id.* at 1:67-2:3. Additionally, as discussed above, Inkpen discloses hospitality applications and data for use in its MARSHA computerized reservation system, and a POSITA would have found it obvious to include the hospitality applications from Inkpen/MARSHA into the system disclosed by Blinn to permit Blinn to function with hospitality applications.

c. b. at least one wireless handheld computing device on which hospitality applications and data are stored,

489. Blinn discloses an interactive wireless communications device such as a personal digital assistant which interacts with a communications medium and

includes software allowing access to the merchant system. The consumer client 102 is a wireless computing device. Ex. 1025 at Figs. 1 and 2 at 102; 10:9-32.

490. “. . . the consumer computer 102 could, for example, be a computer workstation, a local area network of computers, an interactive television, an interactive kiosk, a personal digital assistant, an interactive wireless communications device or the like which can interact with the communications medium 108.” Ex. 1025 at 10:9-14.

491. “For example, the communications medium 108 can include...wireless data transmission systems.” Ex. 1025 at 9:23-28.

492. Regarding the disclosure of “hospitality applications” for this claim element, this is discussed above with regard to the Inkpen disclosure at ¶¶ 487-88.

493. It would have been obvious to a POSITA that the consumer computer 102 could have stored hospitality applications and data. *See* Ex. 1025 at 38:43-47; *see also* 1:11-18, 1:30-38, 4:66-5:3. It would further have been obvious to a POSITA that Blinn’s interactive wireless communications device could be a handheld device.

- d. c. at least one Web server on which hospitality applications and data are stored,**

494. Blinn discloses an Internet information server which works in conjunction with the merchant system. *See* Ex. 1025 at Fig. 2 at 202; 1:19-29; 12:23-34.

495. “Typically, a Web site is an Internet-connected computer or computer system which runs server software for serving information using the standard protocols of the World Wide Web.” Ex. 1025 1:22-25.

496. “The Internet information server 202 is a World Wide Web server. The Internet information server 202 supports the use of virtual servers, allowing multiple web servers to run on a single computer. The Internet information server 202 also uses the HyperText Transmission Protocol (HTTP) to communicate with the consumer browsers 110 or the merchant browser 210.” Ex. 1025 12:23-29.

497. Regarding the disclosure of “hospitality applications” for this claim element, this is discussed above with regard to the Inkpen disclosure at ¶¶ 487-88.

498. It would have been obvious to a POSITA that the web server 202 could have stored hospitality applications and data. *See* Ex. 1025 at 38:43-47; *see also* Ex. 1025 at 1:11-18, 1:30-38, 4:66-5:3.

e. d. at least one Web page on which hospitality applications and data are stored,

499. Blinn discloses web pages hosted by merchants created by a dynamic page generator on a store server process which provides the web page to the

consumer client. Ex. 1025 at Fig. 1 at 102, 106, 110 and 120; Fig. 2 at 106; 1:22-29; 8:36-44.

500. “Typically, a Web site is an Internet-connected computer or computer system which runs server software for serving information using the standard protocols of the World Wide Web.” Ex. 1025 at 1:22-25.

501. “When a consumer directs the consumer browser 110 on the consumer computer to access the merchant system 104, the dynamic page generator 120 creates web pages with illustrate different watches offered for sale.” Ex. 1025 at 8:36-39.

502. Regarding the disclosure of “hospitality applications” for this claim element, this is discussed above with regard to the Inkpen disclosure at ¶¶ 487-88.

503. Blinn discloses that a “merchant can add other components to customize the flexible electronic merchandising system 100 for the merchant’s unique sales transactions.” Ex. 1025 at 38:43-47. It would have been obvious to a POSITA that the wireless handheld computing device rendering the web page via a browser could have stored hospitality applications and data. *See* Ex. 1025 at 38:43-47; *see also* 1:11-18, 1:30-38, 4:66-5:3.

f. e. an application program interface, and

504. Blinn discloses communication with third party credit card authorization software including “VeriFone’s Point of Sale (vPOS) software.” Ex. 1025 37:61-62; *see also* Fig. 12C, 30:32-37, and 37:55-64.

505. In order to integrate the VeriFone Point of Sale software with the Merchant System 104, an application program interface would be required so that the two systems could communicate with each other. Accordingly, a POSITA would understand Blinn to disclose an application program interface.

g. f. a communications control module,

506. Blinn discloses a communications control module comprised of the router which acts as an interface between the internet and the store server process.

507. “In the preferred embodiment, the router 204 and the merchant store server 212 utilize the global configuration information to interconnect the consumer browsers 110 with the store server processes 106.” Ex. 1025 at 12:50-53.

508. Additionally, the communications control module functionality is performed by the TCP/IP stack within the merchant system 104: “The Microsoft Windows® NT operating system includes a TCP/IP stack which handles all incoming and outgoing message traffic passed over the communications medium 108.” Ex. 1025 at 11:65-12:1.

509. By handling “all incoming and outgoing message traffic” sent to and from the merchant system, the TCP/IP stack working in conjunction with the router 204 serve the role of the communications control module.

h. 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;

510. Blinn discloses applications and data synchronized across the central database described above in 11a above, the wireless personal digital assistant described in element 11b above, the Web server described in 11c above, and the Web page described in 11d above.

511. “The consumer client 102 contains a consumer browser 110. The consumer browser 110 communicates with the store server process 106 and displays the web documents created by the store server process 106. Each store server process 106 provides a server architecture that supports the presentation and administration of a virtual store. Preferably, the store server process 106 comprises a number of components including a dynamic page generator 120, an action manager 122, one or more orders 124 and an order processing module 126. Furthermore, in communication with the store server process 106 is a storage device such as a hard disk which contains HTML structures 128 which define the layout of different HTML pages. In addition, the store server process 106 is in

communication with one or more databases 130 with a database module 132.” Ex. 1025 7:64-8:11.

512. “In other embodiments, the consumer computer 102 could, for example, be a computer workstation, a local area network of computers, an interactive television, an interactive kiosk, a personal digital assistant, an interactive wireless communications device or the like which can interact with the communications medium 108. While in such systems the operating systems will differ, they will continue to provide the appropriate communications protocols needed to establish communication links with the communications medium 108.” *Id.* at 10:9-18.

513. “During a typical shopping session, the consumer browser 110 and the store server process 106 communicate with each other over the communications medium 108. Typically, the consumer browser 110 sends URL addresses to the store server process 106, and the store server process 106 responds with HTML documents. The HTML documents may contain registration information, product offerings, promotional advertisements, order forms, etc.” *Id.* at 13:36-43.

514. “Associated with the shopper table 300 is the shopper manager 320. The shopper manager 320 adds, modifies and deletes the entries existing in the shopper table 300.” *Id.* at 16:1-6.

515. “The product variant table 802 is also merchant defined and stores information for a specific product within the product family. Each row in the product variant table 802 is a record corresponding to a particular product while each column contains information related to the products. For example, the product variant columns may contain a product's family identifier, stock keeping unit (sku), a color value, a size value, etc. The format of the product family table 800 is merchant defined and can contain wide variety of product characteristics. The merchant specifies the location of a query which queries the product variant table 802 in the registry.” *Id.* at 16:34-45.

516. “In addition, the URL can contain the number of items (quantity) and the price of the items.” *Id.* at 18:26-28.

517. “The OrderItemValidate component 1226*b* is configured to check the order 124 for required items, and verify that the required items exist.” *Id.* at 24:36-38.

518. “The components in the inventory stage 386 verify that every selected item is in stock.” *Id.* at 29:61-62.

519. “When the ReduceLocalInventory component 1282*e* receives the order 124, the ReduceLocalInventory component 1282*e* reduces the inventory in an inventory database 130 by the number of products ordered. The

ReduceLocalInventory component 1282e uses the sku key-value pairs and the quantity key-value pairs to specify a database query which deducts the quantity amounts from the database 130.” *Id.* at 38:25-31; *see also* Fig. 6.

520. It would have been obvious to a POSITA that upon the store server process and consumer browsers on computers and handheld devices becoming connected, the sales and item data maintained on the store server databases would be sent to the consumer browsers, including PocketWeb and NetHopper, rendered on the consumer computer and wireless handheld device, and thereby the data and applications on the store server process and the consumer browsers on the computers and handheld devices would become synchronized (as that term is properly construed). This is further evidenced by the inventory stage, which adjusts the quantities in the database upon a sale made via one of the consumer browsers such that future downloads reflect the adjusted inventory levels, thereby achieving synchronization. Ex. 1025 at 36:29-51 and 38:25:31. Additionally, Figure 6’s display of the credit card user’s name “Gary” evidences synchronization among the devices of Blinn’s system because the user “Gary” had to input his name prior to the display of Figure 6, and the fact that “Gary’s” name is displayed in Fig. 6 indicates that it was communicated to the requisite devices (i.e., the Web server, etc.).

i. wherein the application program interface enables integration of outside applications with the hospitality applications and

521. Blinn discloses that the system discloses communication with third party credit card authorization software including “VeriFone’s Point of Sale (vPOS) software” that integrates with the hospitality applications on the store server process 106 to process the order. Ex. 1025 at 37:61-62; *see also* Ex. 1025 8:23-34; 37:55-38:4.

522. Regarding the disclosure of “hospitality applications” for this claim element, this is discussed above with regard to the Inkpen disclosure at ¶¶ 487-88.

523. The store server process 106 in creating and completing an order integrates with the third party VeriFone Point of Sale software. This evidences the claimed integration of the outside applications, such as VeriFone’s Point of Sale software, with the store server processes that allows the VeriFone vPOS software to verify the credit card payments of the end user, including information input by the purchaser which shows up on the purchase screen in Figure 6. This information will thus be reflected in the database, store server process as well as on the web server and web pages downloaded to the consumer computer and wireless handheld device.

- j. wherein the communications control module is an interface between the hospitality applications and any other communications protocol,**

524. Blinn discloses the communications control module described in element 11f above serving as an interface between the hospitality applications on the store server processes and any other communications protocol because the communications control module disclosed by Blinn handles all incoming and outgoing message traffic, which would include the hospitality applications and other communications protocol.

525. “The Microsoft Windows® NT operating system includes a TCP/IP stack which handles all incoming and outgoing message traffic passed over the communications medium 108.” Ex. 1025 at 11:65-12:1; Fig. 2 at 205.

526. “In the preferred embodiment, the router 204 and the merchant store server 212 utilize the global configuration information to interconnect the consumer browsers 110 with the store server processes 106.” *Id.* at 12:50-53.

527. Additionally, Blinn contains a communications control module that interfaces between the store server process and one or more other communications protocols, which is necessarily present given the system features.

528. Regarding the disclosure of “hospitality applications” for this claim element, this is discussed above with regard to the Inkpen disclosure ¶¶ 487-88.

k. wherein the synchronized data relates to orders.

529. Blinn discloses the synchronized data relating to orders because the “system allows merchants to create electronic orders, which are easily adaptable for different sales situations.” Ex. 1025 at Abstract.

2. Claim 12.

a. An information management and synchronous communications system for use with wireless handheld computing devices and the internet comprising:

530. The analysis for this claim element is the same as set forth above at ¶¶ 480-83 because the claim language is identical.

b. a. a central database containing hospitality applications and data,

531. The analysis for this claim element is the same as set forth above at ¶¶ 484-88 because the claim language is identical.

c. b. at least one wireless handheld computing device on which hospitality applications and data are stored,

532. The analysis for this claim element is the same as set forth above at ¶¶ 489-93 because the claim language is identical.

d. c. at least one Web server on which hospitality applications and data are stored,

533. The analysis for this claim element is the same as set forth above at ¶¶ 494-98 because the claim language is identical.

e. d. at least one Web page on which hospitality applications and data are stored,

534. The analysis for this claim element is the same as set forth above at ¶¶ 499-503 because the claim language is identical.

f. e. an application program interface, and

535. The analysis for this claim element is the same as set forth above at ¶¶ 504-05 because the claim language is identical.

g. f. a communications control module,

536. The analysis for this claim element is the same as set forth above at ¶¶ 506-09 because the claim language is identical.

h. 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;

537. The analysis for this claim element is the same as set forth above at ¶¶ 510-20 because the claim language is identical.

i. wherein the application program interface enables integration of outside applications with the hospitality applications and

538. The analysis for this claim element is the same as set forth above at ¶¶ 521-23 because the claim language is identical.

j. wherein the communications control module is an interface between the hospitality applications and any other communications protocol,

539. The analysis for this claim element is the same as set forth above at ¶¶ 524-28 because the claim language is identical.

k. wherein the synchronized data relates to waitlists.

540. Blinn discloses synchronized data relating to backorders (*i.e.* waitlists) for orders of components that are not in inventory.

541. “The LocalInventory component 1270b uses the sku key-value pairs to perform one or more database queries which determine whether the product local inventory amount contains enough of the desired items. If not, the LocalInventory component 1270b sets the inventory-- backorder flag which indicates to the consumer that the merchant is out of the selected items. The merchant adds the LocalInventory component 1270b to the registry with the "WLStdOrder.LocalInventory" command.” Ex. 1025 at 30:16-24.

542. A POSITA would have understood that the lists disclosed in Blinn to relate to waitlists because a backorder is a form of a waitlist.

3. Claim 13.

- a. An information management and synchronous communications system for use with wireless handheld computing devices and the internet comprising:**

543. The analysis for this claim element is the same as set forth above at ¶¶480-83 because the claim language is identical.

- b. a. a central database containing hospitality applications and data,**

544. The analysis for this claim element is the same as set forth above at ¶¶ 84-88 because the claim language is identical.

- c. b. at least one wireless handheld computing device on which hospitality applications and data are stored,**

545. The analysis for this claim element is the same as set forth above at ¶¶ 489-93 because the claim language is identical.

- d. c. at least one Web server on which hospitality applications and data are stored,**

546. The analysis for this claim element is the same as set forth above at ¶¶ 494-98 because the claim language is identical.

- e. d. at least one Web page on which hospitality applications and data are stored,**

547. The analysis for this claim element is the same as set forth above at ¶¶ 499-503 because the claim language is identical.

f. e. an application program interface, and

548. The analysis for this claim element is the same as set forth above at ¶¶ 504-05 because the claim language is identical.

g. f. a communications control module,

549. The analysis for this claim element is the same as set forth above at ¶¶ 506-09 because the claim language is identical.

h. 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;

550. The analysis for this claim element is the same as set forth above at ¶¶ 510-20 because the claim language is identical.

i. wherein the application program interface enables integration of outside applications with the hospitality applications and

551. The analysis for this claim element is the same as set forth above at ¶¶ 521-23 because the claim language is identical.

j. wherein the communications control module is an interface between the hospitality applications and any other communications protocol,

552. The analysis for this claim element is the same as set forth above at ¶¶ 524-28 because the claim language is identical.

k. wherein the synchronized data relates to reservations.

553. Blinn discloses the synchronized data relating to reservations because Blinn discusses the ability to hold orders. Ex. 1025 at 18:30-33.

554. A POSITA would have understood that the lists disclosed in Blinn to relate to waitlists. This is further evidenced by the disclosure of U.S. patent 7,783,506 which relates to reserving items in an inventory and is disclosed in the “references” section of the Blinn patent.

4. Claim 15.

a. The information management and synchronous communications system of claim 11, 12, or 13

555. The analysis for this claim element is the same as set forth above in claims 11-13 because claim 15 depends therefrom.

b. wherein the data is sent to a wireless paging device.

556. Blinn discloses the data sent to a wireless paging device by its disclosure of data being sent to an interactive wireless communications device. Ex. 1025 at 10:9-14.

557. A POSITA would have understood that the interactive wireless communications device from Blinn is a wireless paging device as required by claim 15.

IX. Patentability Analysis of the '077 Patent

558. I have reviewed the claims of the '077 patent and compared those to the prior art known to me.

559. As detailed below, I believe claims 1-18 of the '077 patent would have been obvious to one of ordinary skill in the art as of the earliest possible priority date of the '077 patent on the grounds set forth below.

A. Obviousness of Claims 1-18 Based on the Micros 8700 Pub and Digestor.

560. It is my understanding that there are many legal bases under which two prior art references could be combined. It is my opinion that a person of ordinary skill in the art would have found it obvious to combine the system of Micros 8700 Pub with the wireless handheld devices disclosed in Digestor because it would be combining use of known techniques to improve a similar device in the same way.

561. The Micros 8700 UM describes a menu-based, database-driven, point-of-sale restaurant management system sold and distributed by Micros Systems, Inc., called the Micros 8700 Hospitality Management System ("Micros 8700 HMS"). The Micros 8700 UM describes the system as an "integrated Point-Of-Sale (POS) system comprising modular hardware and flexible, user-configured software." Ex. 1027 at 1-2. Along with the POS operations, the Micros 8700

HMS provides printing, sales and cost reporting, and interfaces to third-party peripheral equipment and software including property management systems, among other functionalities. *Id.*

562. The Micros 8700 HMS included the 8700 HMS base station in communication with user workstations and wireless handheld computing devices, called hand-held touchscreens (“HHTs”), all of which include graphical user interfaces for displaying, manipulating, and storing menus. *Id.* at 1-3 to 1-4, 1-18, 3-2, 5-2, 5-22, D-33 to D-35. The Micros 8700 HMS permits the display and generation of multiple menus. For example, Micros 8700 HMS discloses the capability to display menu items such as appetizers for a food menu among other selections. *Id.* at 1-18 and 3-3 to 3-10. The Micros 8700 HMS further allows the user to perform almost all of the POS operations that can be performed on a user workstation. *Id.* at 1-17. In addition to displaying information across these devices, Micros 8700 HMS synchronizes and updates information across these devices through, *e.g.*, updating the menu data on these devices. *Id.* at 5-13. The Micros 8700 HMS further discloses display of menus on the graphical user interface of devices of different display sizes and requirements, such as user workstations and handheld terminals. Ex. 1027 at 1-5 to 1-16, 5-13. I refer to the Micros 8700 UM and its appendices together as the “Micros 8700 Pub.”

563. In Modern Database Management, McFadden describes the use of a centralized database that was queried by client devices to obtain data when it was needed, such as in response to user queries. Ex. 1026 at 430. Alternatively, the concept of storing separate full or partial copies of a central database client sites (sometimes referred to as database replication) was also well known in the art. *Id.* 430-31.

564. Digester describes “a software system which automatically re-authors arbitrary documents from the world-wide web to display on small screen devices such as PDAs and cellular phones, providing device independent access to the web.” Ex. 1022 at Abstract. Digester discloses four approaches for formatting documents for display on small screens, including: (1) device-specific authoring, (2) multiple-device authoring, (3) client-side navigation, and (4) automatic re-authoring. *Id.* at 1076. Automatic re-authoring can be performed at either the server that serves the documents, the client, or an intermediate device. *Id.*

565. While the Micros 8700 HMS system was implemented using proprietary communications and data formats, it would have been obvious to a POSITA to implement that system using well-known internet technologies such as hypertext transport protocol (HTTP) for communications (including transmission of menus and selections from menus) among the system components, and

hypertext markup language and web browsers for authoring and displaying menus and other data at the user workstations and the HHTs.

566. It would further have been obvious to a POSITA to utilize a web server as disclosed in Digestor for communications among the various system components. A POSITA would have been motivated to do so in order to take advantage of existing hardware and software to minimize development costs. Because both Micros 8700 UM and Digestor discuss display of data on multiple devices with different display configurations, it would have been obvious to a POSITA to combine Digestor's customized display layout teachings to the user workstation and HHT devices supported by the Micros 8700 HMS so that menus would be displayed appropriately on the differently-sized display screens of all devices in the system. It should further be noted that nothing in the claims of the '077 patent preclude both the "web page" and the "wireless handheld device" from being implemented as wireless handheld devices with browsers, and this affects all grounds raised for patentability challenges. This combination renders each of the claims of the '077 patent obvious as shown in the following charts.

1. Claim 1.

a. An information management and real time synchronous communications system for configuring and transmitting hospitality menus comprising

567. The Micros 8700 UM discloses an information management and real time synchronous communications system for processing orders, configuring, and transmitting menus for a hospitality management system (HMS) that allows restaurants to take and complete orders, and keep track of inventory of menu items remaining for purchase in real-time. Ex. 1027 at 1-2, 5-13.

568. “The 8700 is an integrated Point-Of-Sale (POS) system comprising modular hardware and flexible, user-configured software.... An 8700 System includes personal computer(s), User Workstations, printers, peripheral devices, and software. The 8700’s modular design allows great flexibility in configuring a system that is both cost effective and functional.” Ex. 1027 at 1-2.

569. “The item quantity, name, and price posts to the check detail. Depending on the availability of the item and the programming of the system, one of the prompts shown below will display.” Ex. 1027 at 5-13. “The Special Count may be set for those Menu Items that are programmed for limited availability (Menu Item Class Type Definition #16 - Check Menu Item Availability Before Allowing Sale - is set ON.) The Special Count is reduced each time a Menu Item is

ordered. When the count reaches zero, the Menu Item automatically shifts to ‘Not Available.’” *Id.* at 11-28.

570. Digestor discloses the use of Internet technology for displaying information on both large and small screen devices. Ex. 1022 at 1075.

571. A POSITA would have understood that the Micros 8700 required a synchronous, real-time communications system to maintain an updated “Special Count” of menu items available for display on other display devices in the system. A POSITA would further have understood that a system implemented with Internet technology as disclosed in Digestor (Ex. 1022 at 1075) constituted a “real time” and “synchronous” communications system as those terms are used in the Ameranth Patents despite the speed issues discussed above in paragraph 90.

b. a. a central processing unit

572. The Micros 8700 UM discloses a central processing unit in the PC Workstation. Ex. 1027 at 1-12.

573. “The PC Workstation (PCWS) is a personal computer that functions both as a PC and a User Workstation,” including a “[s]ystem board supporting a variety of true 32-bit processors, including 486SX 25Mhz, 486DX/2 66Mhz, and 486DX/4 100Mhz.” Ex. 1027 at 1-12.

574. Additionally, the patent examiner found this element in the Micros 8700 Pub. Ex. 1012 (Jan. 20, 2010 Final Rejection) at 771.

c. b. a data storage device connected to said central processing unit,

575. The Micros 8700 UM discloses various data storage devices connected to the central processing unit.

576. “Memory configurations ranging from 1 Mbyte to 64 Mbytes, with an optional cache available as 128 Kbytes or 256 Kbytes” as features of the PC Workstation which also includes the central processing unit. Ex. 1027 at Micros at 1-12.

577. “Disk drive options, including an internal hard drive and an external floppy disk drive.” Ex. 1027 at 1-12.

578. “The SQL module provides an industry standard set of commands that allow you to define, display, and update 8700 database information in tables (similar to a typical spreadsheet). These commands also allow you to import database information into many accounting packages as well as Standard database applications like dBase IV. The Unix cron command allows SQL commands to be executed at specified dates and times. Thus, updates to the **8700 database** can be performed unattended.” Ex. 1027 at 1-3 (emphasis added).

579. Additionally, the patent examiner found this element in the Micros 8700 Pub. Ex. 1012 (Jan. 20, 2010 Final Rejection) at 771.

580. A POSITA would understand that a data storage device could be a volatile memory such as a RAM chip, or a non-volatile memory such as a hard disk drive.

d. c. an operating system including a first graphical user interface,

581. The Micros 8700 UM discloses user workstations, such as personal computer work stations, running the Unix operating system with a graphical user interface.

582. “An 8700 System includes personal computer(s), User Workstations, printers, peripheral devices, and software. The 8700’s modular design allows great flexibility in configuring a system that is both cost effective and functional. Further, the 8700 provides multitasking and multi-user capability through the Unix operating system.” Ex. 1027 at 1-2.

583. “User Workstations (UWS) are used to record all sales and time keeping activity in the system....” Ex. 1027 at 1-4.

584. “The Screen Display displays transaction information during POS Operations...This illustration shows the screen display format for UWS/1 and UWS/2.” Ex. 1027 at 1-7; *see also* Ex. 1027 Appendix D (detailing graphic user interface procedures for adding and manipulating records).

585. Additionally, the patent examiner found this element in the Micros 8700 Pub. Ex. 1012 (Jan. 20, 2010 Final Rejection) at 772.

e. d. a master menu including at least menu categories, menu items and modifiers,

586. The Micros 8700 UM discloses a master menu including menu categories such as appetizers, menu items such as a list of appetizers, and modifiers such as condiments.

587. “A lookup key lists a set of items on the operator display and allows the operator to choose one. It optimizes keyboard space by linking multiple menu items or functions to a single key. For example, one set of menu items might be linked to an appetizer lookup. When an operator presses the appetizer lookup, a numbered list of appetizers appear on the display....” Ex. 1027 at 1-18; *see also id.* at 3-8.

588. “Many menu items are programmed to require or allow condiments. The term "condiment" includes anything that may modify a menu item- accompaniments, toppings, dressing, preparation instructions, etc. You will be prompted for required condiments, but not for condiments that are allowed (not required).” Ex. 1027 at 5-22; *see also id.* at 3-12 and at 5-2.

589. Additionally, the patent examiner found this element in the Micros 8700 Pub. Ex. 1012 (Jan. 20, 2010 Final Rejection) at 772.

f. wherein said master menu is capable of being stored on said data storage device pursuant to a master menu file structure and

590. The Micros 8700 UM discloses that the master menu is stored on the user workstation.

591. The “[User Workstation] Procedures are used to perform tasks that modify (change or update) the system’s database. For example, using UWS Procedures, a manager may edit, add, or delete records from the employee or menu item files.

592. Although many of these procedures can be performed at the PC through System Configurator, there are advantages to using UWS Procedures . . .” Ex. 1027 at 11-2; *see also* Appendix D, D-33 to D-36.

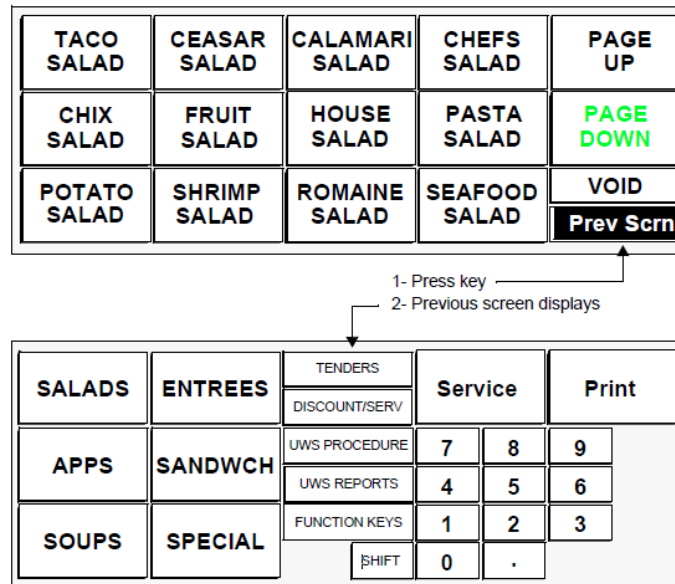
593. Additionally, the patent examiner found this element in the Micros 8700 Pub. Ex. 1012 (Jan. 20, 2010 Final Rejection) at 773.

g. said master menu is capable of being configured for display to facilitate user operations in at least one window of said first graphical user interface as cascaded sets of linked graphical user interface screens, and

594. The Micros 8700 UM discloses that the graphical user interface of the user workstation is configured as cascaded sets of linked graphical user interface screens that are configured to facilitate user operations, such as cashier or manager functions, or taking orders.

595. “When you sign in at a UWS/3, a “Default” Transaction Touchscreen will display based on how the system is programmed. The particular screen that displays is unique to each installation. Typically, each job function (for example, server, cashier, manager) has its own default transaction touchscreen that gives access to specific operations.” Ex. 1027 at 3-2 and Ex. 1027 at 3-8. The user workstation displays cascaded sets of linked graphical user interface screens such as cascaded ‘Main Food and Beverage’ and ‘Salads’ screens shown below:

Mary pressed [Salads] by mistake on her main food and beverage touchscreen. Luckily, there is a [Previous Screen] key programmed on the SLU screen that is generated by [Salads]. When Mary presses [Previous Screen], the Main Food and Beverage Touchscreen is displayed again. This scenario is illustrated below.



596. Additionally, the patent examiner found this element in the Micros 8700 Pub. Ex. 1012 (Jan. 20, 2010 Final Rejection) at 773.

- h. e. menu configuration software enabled to generate a programmed handheld menu configuration from said

**master menu for wireless transmission to and
programmed for display on a wireless handheld
computing device,**

597. The Micros 8700 UM discloses that menus on the HHT can be used to perform many of the same operations as performed on the user workstations.

598. “The HHT is a portable User Workstation. Like the UWS/3, it contains an 8700 Revenue Center database. Using the HHT, an operator can post orders, close guest checks, and perform almost every other operation that is available on a UWS.” *See* Ex. 1027 at Micros 1-15. Digestor discloses reauthoring software that modifies a master document sized for display on a large screen by dividing it into a set of smaller linked documents sized for display on a smaller screen of a wireless handheld terminal. Ex. 1022 at 1078 and Fig. 3. “The HHT transmits posting and transaction information to the Base Station (BST), and the BST transmits guest check information and database modifications to the HHT.” *See* Ex. 1027 at Micros 1-15.

599. It would have been obvious to a POSITA to utilize reauthoring software as disclosed in Digestor to modify the size of the menu pages displayed on the workstation by dividing them into smaller pages for display on the smaller screen of the hand held terminal.

i. said programmed handheld menu configuration comprising at least menu categories, menu items and modifiers and

600. The Micros UM discloses that the HHT can “can post orders, close guest checks, and perform almost every other operation that is available on a” workstation. Ex. 1027 at Micros 1-15.

601. One of these operations is the display of menu categories, menu items and modifiers. See Ex. 1027 at Micros 3-7 to 3-10, 3-16 (depicting HHT icon); id. at xiv (indicating that the HHT icon indicates “operations [] can be performed on an HHT, as well as a UWS.” Ex. 1027 at Micros xiv.

602. The disclosure from element 1d above additionally discloses this element here.

603. Additionally, the patent examiner found this element in the Micros 8700 Pub. Ex. 1012 (Jan. 20, 2010 Final Rejection) at pp. 773-74.

- j. wherein the menu configuration software is enabled to generate said programmed handheld menu configuration by utilizing parameters from the master menu file structure defining at least the menu categories, menu items and modifiers of the master menu such that at least the menu categories, menu items and modifiers comprising the programmed handheld menu configuration are synchronized in real time with analogous information comprising the master menu,**

604. The Micros 8700 UM discloses software enabled to generate menus as discussed in the previous claim elements. *See e.g., supra* at elements “e. menu configuration software enabled to generate a programmed handheld menu configuration from said master menu for wireless transmission to and programmed for display on a wireless handheld computing device,” and “said programmed handheld menu configuration comprising at least menu categories, menu items and modifiers and” .

605. The software provides the operations to be performed on both the HHT as well as the workstation, which includes using the menu categories, items and modifiers from the master menu file described in previous claim elements above. *See supra* and Ex. 1027 at xiv and 3-7 to 3-10.

606. Micros discloses synchronizing the menu information in real time as evidenced by the ability to track the number of menu items remaining:

Post Limited Availability Menu Item



Procedure

1. Begin or pick up a guest check.
 2. If ordering more than one of this menu item, press the quantity.
 3. Press the menu item key, for example: [Daily Spcl #1].
- The item quantity, name, and price posts to the check detail. Depending on the availability of the item and the programming of the system, one of the prompts shown below will display.

Prompts

Prompt	What it Means	Action Required
ONLY 1 <i>name</i> REMAINING, where <i>name</i> is the menu item	When the count decrements to 2 and another of the menu item is ordered, the system warns of the impending outage with the prompt.	Press [Clear] to continue. Notify other operators.
ONLY # ITEMS REMAINING, where # is the quantity on hand.	An order was placed for more of an item than is on hand.	Press [Clear] to continue. Order equal to or less than the number remaining.
NO MORE <i>name</i> REMAINING	No more of this item is available.	Press [Clear] to continue. The status can be changed through UWS Procedure #14.

Ex. 1027 at 5-13. *See also id.* at 5-14, 5-27, and 11-28. Moreover, an implementation of the Micros system with Internet technology as disclosed in Digestor would constitute a real time synchronous system as those terms are used in the '077 patents as discussed above in paragraph 90. Additionally, Digestor discloses reauthoring software that modifies a master document sized for display on a large screen by dividing it into a set of smaller linked documents sized for display on a smaller screen of a wireless handheld terminal. Ex. 1022 at 1078 and Fig. 3.

607. Additionally, the patent examiner found this element in the Micros 8700 Pub. Ex. 1012 (Jan. 20, 2010 Final Rejection) at pp. 774-75.

- k. wherein the menu configuration software is further enabled to generate the programmed handheld menu configuration in conformity with a customized display layout unique to the wireless handheld computing device to facilitate user operations with and display of the programmed handheld menu configuration on the display screen of a handheld graphical user interface integral with the wireless handheld computing device, wherein said customized display layout is compatible with the displayable size of the handheld graphical user interface**

608. The Micros 8700 UM discloses software enabled to generate a menu with a layout unique to the HHT.

609. “The HHT’s LCD touchscreen displays 12 lines of 20 to 30 characters. (It varies because a proportional font is used.) The touchscreen overlay features 8 columns by 5 rows, for a total of up to 40 touchscreen keys. Two character sizes are available for key legends.” Ex. 1027 at 1-15.

610. The HHT and User Workstations “require[] different steps and different keys than those described [in the User Manual].” Ex. 1027 at 2-19. *See also id.* at 11-25 to 11-26 (referring to HHT SLU Group field for HHT only and SLU Group field for non-HHT touchscreens).

611. Digestor discloses customizing the display of content for graphic user interfaces of handheld devices with varying screen sizes.

612. “Digestor is a software system which automatically re-authors arbitrary documents from the world-wide web to display appropriately on small screen devices such as PDAs and cellular phones, providing device independent access to the web. Digestor is implemented as an HTTP proxy which dynamically re-authors requested web pages using a heuristic planning algorithm and a set of structural page transformations to achieve the best looking document for a given display size.” Ex. 1022 at 1075.

613. “Automatic re-authoring is thus the ideal approach to providing broad access to the web from a wide range of devices, if it can be made to produce legible, navigable and aesthetically pleasing re-authored documents without loss of information.” Ex. 1022 at 1077.

614. A POSITA would have understood that the different steps and keys required on the HHT and the User Workstation exemplified unique displays and layouts specific to the HHT and the various User Workstations, especially in light of the different specification options of the displays. Additionally, a POSITA would have found it obvious to combine Micros with Digestor to support other wireless handheld devices with varying screen sizes to create customized display layouts compatible with such handheld devices.

I. wherein the programmed handheld menu configuration is configured by the menu configuration

software for display as programmed cascaded sets of linked graphical user interface screens appropriate for the customized display layout of the wireless handheld computing device,

615. The Micros 8700 UM discloses displaying menu content as cascaded sets of linked graphical user interface screens as evidenced by the ability to go “previous” or “next” screens:

Previous Screen



Procedure

Press [Previous Screen].

The last, user-defined touchscreen is displayed.



Note

If several screens have been displayed and you wish to go back two or more screens, press [Previous Screen] as many times as necessary until the desired screen displays. However, note that [Previous Screen] disregards (or skips) SLU screens.

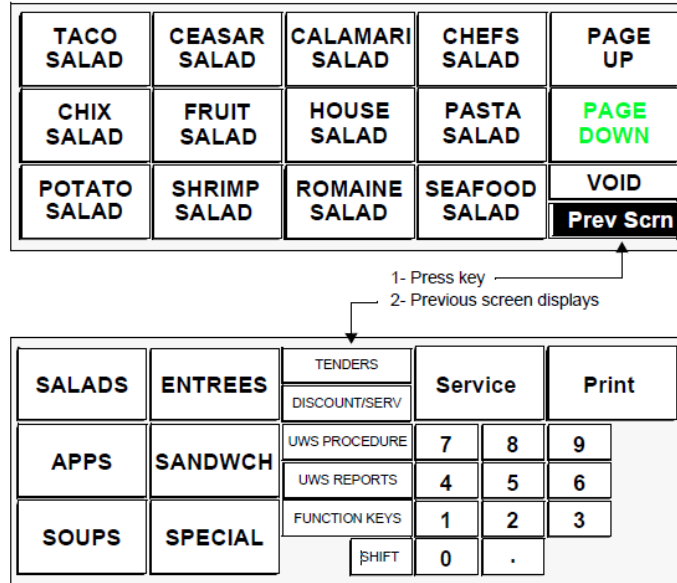
Prompts

None.


Ex. 1027 at 3-7.

616. Additionally, see Ex. 1027 at 3-8 and 3-9:

Mary pressed [Salads] by mistake on her main food and beverage touchscreen. Luckily, there is a [Previous Screen] key programmed on the SLU screen that is generated by [Salads]. When Mary presses [Previous Screen], the Main Food and Beverage Touchscreen is displayed again. This scenario is illustrated below.



By including the icon described at Ex. 1027 at xiv, the Micros discloses the ability to display the programmed cascaded sets of linked graphical user interface screens on the handheld device:

This symbol...	called a(n)...	is used to...
	HHT Icon	denote operations that can be performed on an HHT, as well as on a UWS. This symbol is displayed below the key symbol on the first page of an operation's description.

617. As discussed above, Digestor discloses dividing pages sized for display on a large screen into sets of smaller pages for display on a smaller screen. Ex. 1022 at 1078-1079. To the extent it is not inherent, it would have been obvious to a POSITA to link the smaller pages in the sets to each other and to

include navigation links including “next” and “previous” links so that the smaller documents would form cascaded sets of linked graphical user interface screens.

Ex. 1028 (HTML Manual of Style) at 55 and Fig. 3.5.

- m. wherein said programmed cascaded sets of linked graphical user interface screens for display of the handheld menu configuration are configured differently from the cascaded sets of linked graphical user interface screens for display of the master menu on said first graphical user interface, and**

618. The MICROS 8700 UM discloses different displays for the user workstation and the wireless handheld device such that the menu configuration between the two differs.

619. “The HHT’s LCD touchscreen displays 12 lines of 20 to 30 characters. (It varies because a proportional font is used.) The touchscreen overlay features 8 columns by 5 rows, for a total of up to 40 touchscreen keys. Two character sizes are available for key legends.” Ex. 1027 at 1-15.

620. “The Screen Display displays transaction information during POS Operations. The same screen format is used by the UWS/1 and UWS/2. The UWS/3 has a slightly different format which provides the same information.” Ex. 1027 at 1-7. *See also id.* at 1-4 through 1-6, 1-8 through 1-11. The HHT and User Workstations “require[] different steps and different keys than those described [in the User Manual].” Ex. 1027 at 2-19.

621. It would have been obvious to a POSITA that the master menu displayed on the user workstation could be comprised of multiple pages forming a cascaded set of linked graphical user interface screens, and that each such page could itself be modified by further dividing it into multiple pages forming a cascaded set of linked graphical user interface documents for display on a smaller sized screen of a wireless handheld device.

- n. wherein the system is enabled for real time synchronous communications to and from the wireless handheld computing device utilizing the programmed handheld menu configuration including the capability of real time synchronous transmission of the programmed handheld menu configuration to the wireless handheld computing device and real time synchronous transmissions of selections made from the handheld menu configuration on the wireless handheld computing device, and**

622. The Micros 8700 UM discloses real time synchronization of menu data to and from the wireless handheld device, including e.g. the availability of special menu items:

Post Limited Availability Menu Item



Procedure

1. Begin or pick up a guest check.
2. If ordering more than one of this menu item, press the quantity.
3. Press the menu item key, for example: [Daily Spcl #1].
The item quantity, name, and price posts to the check detail. Depending on the availability of the item and the programming of the system, one of the prompts shown below will display.

Prompts

Prompt	What it Means	Action Required
ONLY 1 <i>name</i> REMAINING, where <i>name</i> is the menu item	When the count decrements to 2 and another of the menu item is ordered, the system warns of the impending outage with the prompt.	Press [Clear] to continue. Notify other operators.
ONLY # ITEMS REMAINING, where # is the quantity on hand.	An order was placed for more of an item than is on hand.	Press [Clear] to continue. Order equal to or less than the number remaining.
NO MORE <i>name</i> REMAINING	No more of this item is available.	Press [Clear] to continue. The status can be changed through UWS Procedure #14.

Ex. 1027 at 5-13.

623. “The limited availability menu item feature allows you to define menu items to have a limited quantity available: After a programmed number of sales are posted, the system indicates that the menu item is unavailable when that menu item is entered. Example At the beginning of his shift, the manager entered the number of daily special s available during lunch, near the end of the lunch shift, Mary entered an order for five daily specials. She received the system prompt: "ONLY 4 DAILY SPECIAL REMAINING,'. She returned to her table and informed the group that one would have to order something else which one of the customers was

happy to do. She then placed the order for four daily specials, Immediately after service totalling her check, her order, George, tried to enter an order for the daily special and received this message: "NO MORE DAILY SPECIAL REMAINING."

Ex. 1027 at 5-13. Additionally, Digestor discloses that "[a]s soon as a state is created containing a document version that is 'good enough', the search is halted and that document is returned to the client for rendering." Ex. 1022 at 1079.

- o. wherein the system is further enabled to automatically format the programmed handheld menu configuration for display as cascaded sets of linked graphical user interface screens appropriate for a customized display layout of at least two different wireless handheld computing device display sizes in the same connected system, and**

624. As discussed above, the Micros 8700 UM discloses displaying cascaded sets of linked graphical user interface screens appropriate for the customized display layout of an HHT:

Previous Screen



Procedure

Press [Previous Screen].

The last, user-defined touchscreen is displayed.



Note

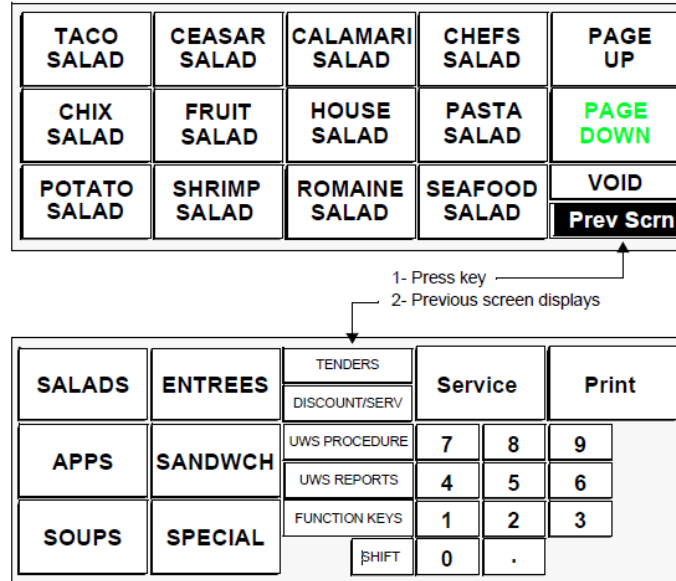
If several screens have been displayed and you wish to go back two or more screens, press [Previous Screen] as many times as necessary until the desired screen displays. However, note that [Previous Screen] disregards (or skips) SLU screens.

Prompts

None.

Ex. 1027 at 3-7.

Mary pressed [Salads] by mistake on her main food and beverage touchscreen. Luckily, there is a [Previous Screen] key programmed on the SLU screen that is generated by [Salads]. When Mary presses [Previous Screen], the Main Food and Beverage Touchscreen is displayed again. This scenario is illustrated below.



Ex. 1027 at 3-8.

625. Digestor teaches generating customized display layouts with cascaded sets of linked user interface screens for wireless handheld devices that have varying screen sizes.

626. “Digestor is a software system which automatically re-authors arbitrary documents from the world-wide web to display appropriately on small screen devices such as PDAs and cellular phones, providing device independent access to the web. Digestor is implemented as an HTTP proxy which dynamically re-authors requested web pages using a heuristic planning algorithm and a set of structural page transformations to achieve the best looking document for a given

display size.” Ex. 1022 at 1075; *see also id.* at 1077 (“The contents of each section is elided from the document and the section header is converted into a hypertext link which, when selected, loads the elided content.”).

627. A POSITA would have understood that the Micros 8700 Pub disclosed generating customized display layouts for devices of various screen sizes, such as User Workstations and HHTs. It would have been obvious to a POSITA to generate customized display layouts for other types of handheld devices, as disclosed for example in Digestor, to enable the Micros 8700 HMS system to work with the various types of portable handheld devices available in the market. *See, e.g.* Ex. 1022 at 1075 (describing various devices).

- p. wherein a cascaded set of linked graphical user interface screens for a wireless handheld computing device in the system includes a different number of user interface screens from at least one other wireless handheld computing device in the system.**

628. The Micros 8700 UM discloses different user interface layouts with different numbers of user interface screens for various types of devices, including user workstations and HHT devices.

629. “The HHT’s LCD touchscreen displays 12 lines of 20 to 30 characters. (It varies because a proportional font is used.) The touchscreen overlay features 8 columns by 5 rows, for a total of up to 40 touchscreen keys. Two character sizes are available for key legends.” Ex. 1027 at 1-15.

630. “The Screen Display displays transaction information during POS Operations. The same screen format is used by the UWS/1 and UWS/2. The UWS/3 has a slightly different format which provides the same information.” Ex. 1027 at 1-7.

631. The HHT and User Workstations “require[] different steps and different keys than those described [in the User Manual].” Ex. 1027 at 2-19.

632. Digestor discloses customizing the display of information for devices, including the number of user interface screens, based on the screen size of the device.

633. “Digestor is a software system which automatically re-authors arbitrary documents from the world-wide web to display appropriately on small screen devices such as PDAs and cellular phones, providing device independent access to the web. Digestor is implemented as an HTTP proxy which dynamically re-authors requested web pages using a heuristic planning algorithm and a set of structural page transformations to achieve the best looking document for a given display size.” Ex. 1022 at 1075.

634. A POSITA would have understood that the Micros 8700 UM disclosed generating customized display layouts for devices of various screen sizes, such as User Workstations and HHTs. It would have been obvious to a

POSITA to generate customized display layouts with different numbers of user interface screens for other types of handheld devices with different display sizes, as disclosed in Digestor, to enable the Micros 8700 HMS system to work with such other handheld devices. *See, e.g.*, Ex. 1022 at 1075 (describing various PDAs, including the Sony MagicLink, Apple Newton, Nokia 9000 Communicator).

2. Claim 2.

a. The information management and synchronous communications system in accordance with claim 1,

635. The disclosures set forth above for claim 1 apply to this element.

b. wherein the system is further enabled by a communications systemic relationship providing a common, linked system comprising

636. The Micros 8700 UM discloses an HMS system with common linked components enabled to communicate with each other.

637. “The 8700 is an integrated Point-Of-Sale (POS) system comprising modular hardware and flexible, user-configured software. In addition to POS operations, the 8700 System also provides: Printing and Video Display Requisition, Sales and Cost Reporting, Labor Scheduling and Time Keeping, Interfaces to third-party peripheral equipment and software, including Property Management Systems. An 8700 System includes personal computer(s), User Workstations, printers, peripheral devices, and software. The 8700’s modular

design allows great flexibility in configuring a system that is both cost effective and functional.” Ex. 1027 at 1-2.

c. a) A Wireless Hub Application;

638. The Micros 8700 UM discloses a base station transmitting information to the HHTs.

639. “The HHT communicates by radio frequency with a Base Station, which is cabled to an LCC or RCC in one of the PCs in an 8700 System. The HHT transmits posting and transaction information to the Base Station (BST), and the BST transmits guest check information and database modifications to the HHT.” Ex. 1027 at 1-15.

d. b) A Web Hub Application;

640. The Micros 8700 UM discloses a base station connected to a PC which includes networking capabilities.

641. The Micros PC workstation “functions both as a PC and a User Workstation” and includes networking functionalities such as “Ethernet 10BaseT and 10Base2 interfaces. Using the MICROS LAN card allows the expansion slot to also be used for other functions, such as serial interfaces, modems, SCSI interface, or multimedia.” Ex. 1027 at 1-12.

642. Digestor discloses that “automatic reauthoring . . . can be performed either on the client, on the server, or on an intermediary HTTP proxy server....” Ex. 1022 at 1076 (emphasis added).

643. The PC Workstation sits in the center of the Micros System allowing the user workstations, HHTs, and base stations to remain in synchronous communication. Ex. 1027 at 1-2. To the extent that the PC workstation was not already capable of connecting to the Web (or internet), a POSITA would have found it obvious to connect the PC workstation to the internet and to configure it to act as a web hub (i.e., a web server) as disclosed in Digestor for the Micros System. *See also* Ex. 1027 at 1-2. A POSITA would have been motivated to do so to provide the capability of accepting orders and purchases via the internet.

e. c) Linked Databases between two or more different Hospitality Applications; and

644. The Micros 8700 UM discloses linked databases between multiple hospitality software applications including at least two of restaurant point of sale systems (see Ex. 1027 at 1-3), or reservations, or waitlists (*e.g.* order waiting line (see Ex. 1027 at B-30)), or frequent customer or ticketing programs (see Ex. 1027 at 4-1 to 4-60).

645. “The System Configurator module is an integral part of the 8700 System, providing: the means to create and edit the database files that define the

parameters of the system—to program the restaurant's operation into the system.”

Ex. 1027 at 1-2. *See also*, Ex. 1012 (Jan. 20, 2010 Final Rejection) at pp. 784-85.

f. d) A Communications Setup Application.

646. Micros discloses prompts and messages used for communications between various components of the system.

647. “UWS prompts and messages are features of the 8700 System that make it easy to learn and to use, by providing the operator with instructions or information. The most common may be divided into four types... Additional prompts ... may include the following: . . . Communications Messages may display, to describe communication conditions that exist between the UWS and other devices in the 8700 System.” Appendix at A-2.”

648. A POSITA would have understood that each UWS included a Communications Setup Application to initiate communication between the UWS and other components of the system.

3. Claim 3.

a. The information management and real time synchronous communications system in accordance with claim 1,

649. The disclosures set forth above for claim 1 apply to this element.

b. wherein the information from the POS database is automatically imported into the system.

650. The MICROS 8700 UM discloses the ability to “import[] and export[] data into and out of the 8700 database.” Ex. 1027 at xix.

651. “The SQL module provides an industry standard set of commands that allow you to define, display, and update 8700 database information in tables (similar to a typical spreadsheet). These commands also allow you to import database information into many accounting packages as well as standard database applications like dBase IV. The Unix cron command allows SQL commands to be executed at specified dates and times. Thus, updates to the 8700 database can be performed unattended.” Ex. 1027 at 1-3.

652. A POSITA would have understood that the database importing functionality of the Micros system as well as the ability of the updates to “be performed unattended” would mean that the POS database would be automatically imported into the system.

4. Claim 4.

a. The information management and real time synchronous communications system in accordance with claim 1,

653. The disclosures set forth above for claim 1 apply to this element.

b. wherein the said Hospitality Applications include at least reservations applications.

654. In addition to claim 1 above, the patent examiner found this element in the Micros 8700 Pub. Ex. 1012 (Jan. 20, 2010 Final Rejection) at pp. 784-85 and 802-03, citing Ex. 1027 at B-30.

655. A POSITA would have found it obvious to include reservation applications such as the reservation application of Ex. 1029 in the Micros system because reservations are commonly used in restaurant services around the world.

5. Claim 5.

a. The information management and real time synchronous communications system in accordance with claim 1,

656. The disclosures set forth above for claim 1 apply to this element.

b. wherein the said Hospitality Applications include at least a Ticketing applications.

657. In addition to claim 1 above, the patent examiner found this element in the Micros 8700 Pub. Ex. 1012 (Jan. 20, 2010 Final Rejection) at pp. 784-85 and 802-03, citing Ex. 1027 at Chapter 4 and 1-2.

658. A POSITA would have found it obvious that the Micros system includes ticketing applications because the guest checks are similar to tickets and checks at restaurants have been referred to synonymously with tickets. *See* Ex. 1054.

6. Claim 6.

a. The information management and real time synchronous communications system in accordance with claim 1

659. The disclosures set forth above for claim 1 apply to this element.

b. in which the wireless handheld computing device is a smart phone.

660. Digestor discloses display of content on smartphones, such as the Nokia 9000 Communicator.

661. “General Magic's Presto!Links for Sony's MagicLink, AllPen's NetHopper for the Newton and Sharp's MI-10 (shown to the right), all provide WWW browsers for PDA class devices, while the Nokia 9000 Communicator and Samsung's Duett provide web access capabilities from cellular phones.” Ex. 1022 at 1075.

662. A POSITA would have found it obvious to use a smart phone such as those disclosed by Digestor in place of the Micros HHT. A reason for doing so is the cost reduction associated with using off-the-shelf smart phones rather than developing a custom hand held terminal such as the Micros HHT.

7. Claim 7.

a. The information management and real time synchronous communications system in accordance with claim 1,

663. The disclosures set forth above for claim 1 apply to this element.

- b. further enabled to facilitate and complete payment processing directly from the wireless handheld computing device including: a) Billing; b) Status and c) Payment Information.**

664. The Micros 8700 UM discloses a handheld device capable of payment processing including billing, status, and payment information.

665. For example, the Micros 8700 UM discloses an HHT that can “tender checks” (*i.e.* process payment) via cash, credit card or room charge. *See* Ex. 1027 at Chapter 9.

666. Additionally, the patent examiner found this element in the Micros 8700 Pub. Ex. 1012 (Jan. 20, 2010 Final Rejection) at pp. 788-89.

8. Claim 8.

- a. The information management and real time synchronous communications system in accordance with claim 1,**

667. The disclosures set forth above for claim 1 apply to this element.

- b. wherein one or more of the layout, views or fonts of the programmed handheld menu configuration are created in conformity with the display screen parameters of the wireless handheld computing device and**

668. The Micros 8700 UM discloses a HHT wherein the layout, views, and fonts are created in conformity with the display screen parameters of the device.

669. “The HHT’s LCD touchscreen displays 12 lines of 20 to 30 characters. (It varies because a proportional font is used.) The touchscreen overlay features 8 columns by 5 rows, for a total of up to 40 touchscreen keys. Two character sizes are available for key legends.” Ex. 1027 at 1-15.

670. “Digester is a software system which automatically re-authors arbitrary documents from the world-wide web to display appropriately on small screen devices such as PDAs and cellular phones.” Ex. 1022 at 1075.

- c. **wherein the system is enabled to generate a view of the programmed handheld menu configuration for user preview from the central computing unit and which facilitates a further user manual modification prior to the transmissions of the programmed handheld menu configuration to the wireless handheld computing device.**

671. In addition to the disclosures set forth in claim one above regarding menu generation, The Micros 8700 UM discloses that changes can be made to the system database using either UWS (user workstation) Procedures or the System Configurator. Ex. 1027 at 11-2. These database changes include changes to menu items. *Id.* at 11-2, 11-22 – 11-30.

672. It would have been obvious to a POSITA to display a preview of a display of both a user workstation and a hand held terminal to a user before the changes were distributed throughout the system as it was a common practice for HTML editors to allow a preview of a modified web page prior to placement of the

modified web page on a server for further dissemination at the time of the '077 patent. An example of such preview functionality for the FrontPage 98 editor is shown in Ex. 1067 at 17-20.

9. Claim 9.

a. An information management and real time synchronous communications system for configuring and transmitting hospitality menus comprising:

673. The analysis for this claim element is the same as set forth above in the corresponding element of claim 1 because the claim language is identical.

b. a. a central processing unit,

674. The analysis for this claim element is the same as set forth above in the corresponding element of claim 1 because the claim language is identical.

c. b. a data storage device connected to said central processing unit,

675. The analysis for this claim element is the same as set forth above in the corresponding element of claim 1 because the claim language is identical.

d. c. an operating system including a first graphical user interface,

676. The analysis for this claim element is the same as set forth above in the corresponding element of claim 1 because the claim language is identical.

- e. said operating system configured to interoperate with the central processing unit, the data storage device and application software;**

677. The Micros 8700 UM discloses a personal computer User Workstation running the Unix operating system.

678. “The 8700 System includes personal computer(s), User Workstations, printers, peripheral devices, and software. The 8700’s modular design allows great flexibility in configuring a system that is both cost effective and functional. Further, the 8700 provides multitasking and multi-user capability through the Unix operating system.” Ex. 1027 at 1-2.

679. A POSITA would understand that the Unix operating system interoperates with the central processing unit and data storage device on the device, as well as application software running on the device.

- f. d. a master menu including menu categories, and menu items**

680. The analysis for this claim element is the same as set forth above in the corresponding element of claim 1 because the claim language is identical.

- g. wherein said master menu is capable of being stored on said data storage device pursuant to a master menu file structure and**

681. The analysis for this claim element is the same as set forth above in the corresponding element of claim 1 because the claim language is identical.

- h. said master menu is capable of being configured for display to facilitate user operations in at least one window of said first graphical user interface as cascaded sets of linked graphical user interface screens; and**

682. The analysis for this claim element is the same as set forth above in the corresponding element of claim 1 because the claim language is identical.

- i. e. a modifier menu capable of being stored on said data storage device, and**

683. Micros 8700 UM discloses a menu including menu categories, menu items, and modifiers such as condiments.

684. “Post Condiments Many menu items are programmed to require or allow condiments. The term "condiment" includes anything that may modify a menu item-accompaniments, toppings, dressing, preparation instructions, etc. You will be prompted for required condiments, but not for condiments that are allowed (not required).” Ex. 1027 at 5-22; *see also*, “Condiments requiring other condiments” at Ex. 1027 at 5-2.

- j. menu configuration software enabled to automatically generate a programmed handheld menu configuration from said master menu for display on a wireless handheld computing device,**

685. The analysis for this claim element is the same as set forth above in the corresponding element of claim 1 because the claim language is identical.

- k. said programmed handheld menu configuration comprising at least menu categories, menu items and modifiers and**

686. The analysis for this claim element is the same as set forth above in the corresponding element of claim 1 because the claim language is identical.

- l. wherein the menu configuration software is enabled to generate said programmed handheld menu configuration by utilizing parameters from the**

687. The analysis for this claim element is the same as set forth above in the corresponding element of claim 1 because the claim language is identical.

- m. master menu file structure defining at least the categories and items of the master menu and modifiers from the modifier menu at least the menu categories, menu items and modifiers comprising the programmed handheld menu configuration**

688. The analysis for this claim element is the same as set forth above in the corresponding element of claim 1 because the claim language is identical.

- n. are synchronized in real time with analogous information comprising the master and modifier menus**

689. The analysis for this claim element is the same as set forth above in the corresponding element of claim 1 because the claim language is similar and only adds in modifier menus, which are disclosed .

- o. wherein the menu configuration software is further enabled to generate the programmed handheld menu configuration in conformity with a customized display**

layout unique to the wireless handheld computing device to facilitate user operations with and display of the programmed handheld menu configuration on the display screen of a handheld graphical user interface integral with the wireless handheld computing device,

690. The analysis for this claim element is the same as set forth above in the corresponding element of claim 1 because the claim language is identical.

p. wherein said customized display layout is compatible with the displayable size of the handheld graphical user interface,

691. The analysis for this claim element is the same as set forth above in the corresponding element of claim 1 because the claim language is identical.

q. wherein the programmed handheld menu configuration is configured by the menu configuration software for display as cascaded sets of linked graphical user interface screens appropriate for the customized display layout of the wireless handheld computing device,

692. The analysis for this claim element is the same as set forth above in the corresponding element of claim 1 because the claim language is identical.

r. wherein said cascaded sets of linked graphical user interface screens for display of the programmed handheld menu configuration are configured differently from the cascaded sets of related graphical user interface screens for display of the master menu on said first graphical user interface, and

693. The analysis for this claim element is the same as set forth above in the corresponding element of claim 1 because the claim language is identical.

- s. **wherein the system is enabled for real time synchronous communications to and from the wireless handheld computing device utilizing the programmed handheld menu configuration including the capability of real time synchronous transmission of at least the menu categories, menu items and modifiers comprising the programmed handheld menu configuration to the wireless handheld computing device and real time synchronous transmissions of selections made from the handheld menu configuration on the wireless handheld computing device, and**

694. The analysis for this claim element is the same as set forth above in the corresponding element of claim 1 because the claim language is identical.

- t. **wherein the system is further enabled to automatically format the programmed handheld menu configuration for display as cascaded sets of linked graphical user interface screens appropriate for a customized display layout of at least two different wireless handheld computing device display sizes in the same connected system, and**

695. The analysis for this claim element is the same as set forth above in the corresponding element of claim 1 because the claim language is identical.

- u. **wherein a cascaded set of linked graphical user interface screens for a wireless handheld computing device in the system includes a different number of user interface screens from at least one other wireless handheld computing device in the system.**

696. The analysis for this claim element is the same as set forth above in the corresponding element of claim 1 because the claim language is identical.

10. Claim 10.

- a. The information management and real time synchronous communications system in accordance with claim 9, further including a communications systemic relationship comprising:**

697. The analysis for this claim element is the same as set forth above in the corresponding element of claims 2 and 9 because of the similarities of the claim language.

- b. a) A Wireless Hub Application;**

698. The analysis for this claim element is the same as set forth above in the corresponding element of claim 2 because the claim language is identical.

- c. b) A Web Hub Application;**

699. The analysis for this claim element is the same as set forth above in the corresponding element of claim 2 because the claim language is identical.

- d. c) Linked Databases Between two or more different Hospitality Applications; and**

700. The analysis for this claim element is the same as set forth above in the corresponding element of claim 2 because the claim language is identical.

- e. d) A Communications Setup Application.**

701. The analysis for this claim element is the same as set forth above in the corresponding element of claim 2 because the claim language is identical.

11. Claim 11.

- a. The information management and real time synchronous communications system in accordance with claim 9,**

702. The analysis from claim 9 above is applicable here.

- b. wherein at least two different hospitality software applications are integrated between and with one another.**

703. Micros 8700 UM discloses an “integrated Point-Of-Sale (POS) system comprising modular hardware and flexible, user-configured software.” Ex. 1027 at 1-2. The system includes at least two hospitality applications for such operations as “Labor Scheduling and Time Keeping” (Ex. 1027 at 1-2), order processing (Ex. 1027 at ch. 4) and payment processing (Ex. 1027 at ch. 9).

12. Claim 12.

- a. The information management and real time synchronous communications system in accordance with claim 9, wherein the system enables automatic importation of the POS database information into the system.**

704. The analysis for this claim element is the same as set forth above in the corresponding element of claim 3 because of the similarities of the claim language.

13. Claim 13.

a. An information management and real time synchronous communications system for use with wireless handheld computing devices and the internet comprising:

705. The Micros 8700 UM discloses an information management and real time synchronous communications system for use with wireless handheld computing devices and networked PC workstations. Ex. 1027 at 1-2 to 1-4, 1-12.

706. The Micros PC workstation “functions both as a PC and a User Workstation” and includes networking functionalities such as “Ethernet 10BaseT and 10Base2 interfaces.” Ex. 1027 at 1-12.

707. Digestor discloses wireless handheld devices with capabilities to connect to the internet. Ex. 1022 at 1076.

708. A POSITA would have found it obvious to combine the Micros system with the internet-capable devices disclosed in Digestor because it would have provided more inclusive networking capabilities, including internet connections, to the Micros system.

b. a) a master database connected in said system and configured to store hospitality application information pursuant to a master database file structure;

709. The Micros 8700 UM discloses a database configured to store information relating to the restaurant pursuant to a master database file structure.

710. “The SQL module provides an industry standard set of commands that allow you to define, display, and update 8700 database information in tables (similar to a typical spreadsheet). These commands also allow you to import database information into many accounting packages as well as Standard database applications like dBase IV. The Unix cron command allows SQL commands to be executed at specified dates and times. Thus, updates to the 8700 database can be performed unattended.” Ex. 1027 at 1-3; *see also* “Master Item Menu File” at Ex. 1027 at D-33 to D-35.

711. Additionally, the patent examiner found this element in the Micros 8700 Pub. Ex. 1012 (Jan. 20, 2010 Final Rejection) at 791.

**c. b) at least one wireless handheld computing device
connected in said system and configured to display
said hospitality application information;**

712. The Micros 8700 UM discloses a wireless handheld touchscreen (“HHT”) device capable of displaying hospitality information, such as restaurant menus.

713. “The HHT is a portable User Workstation. Like the UWS/3, it contains an 8700 Revenue Center database. Using the HHT, an operator can post orders, close guest checks, and perform almost every other operation that is available on a UWS” *See* Ex. 1027 at Micros 1-15.

714. Additionally, the patent examiner found this element in the Micros 8700 Pub. Ex. 1012 (Jan. 20, 2010 Final Rejection) at 792.

d. c) at least one web server connected in said system;

715. Digestor discloses a web server. “automatic reauthoring . . . can be performed either on the client, on the server, or on an intermediary HTTP proxy **server....**” Ex. 1022 at 1076 (emphasis added).

716. A POSITA would have found it obvious to combine the Micros 8700 system with Digestor to enable access to the Micros 8700 system over the internet.

e. d) at least one web page connected in said system and configured to display said hospitality application information; and

717. Digestor discloses web pages, which may be configured to display hospitality information.

718. “Digestor is a software system which automatically re-authors arbitrary documents from the world-wide web to display appropriately on small screen devices such as PDAs and cellular phones, providing device-independent access to the web.” Ex. 1022 at 1075.

719. A POSITA would have found it obvious to combine the Micros 8700 system with Digestor to enable access to the Micros 8700 system over the internet.

f. e) real time communications control software enabled to link and synchronize hospitality application information simultaneously between the master

database, wireless handheld computing device, web server and web page, wherein the communications control software is enabled to utilize parameters from the master database file structure to synchronize the hospitality application information in real time between the master database, at least one wireless handheld computing device, at least one web server and at least one web page such that substantially the same information comprising the hospitality application information is capable of being displayed on the wireless handheld computing device, at least one web page and other display screens of the synchronized system, such that the hospitality application information is synchronized between any connected users,

720. The Micros 8700 UM discloses software for synchronizing restaurant menu information between the master database, user workstations and wireless handheld devices, such that substantially the same information is capable of being displayed on each device.

721. “The 8700 is an integrated Point-Of-Sale (POS) system comprising modular hardware and flexible, user-configured software. In addition to POS operations, the 8700 System also provides: Printing and Video Display Requisition, Sales and Cost Reporting, Labor Scheduling and Time Keeping, Interfaces to third-party peripheral equipment and software, including Property Management Systems. An 8700 System includes personal computer(s), User Workstations, printers, peripheral devices, and software. The 8700’s modular

design allows great flexibility in configuring a system that is both cost effective and functional.” Ex. 1027 at 1-2.

722. “The HHT is a portable User Workstation. Like the UWS/3, it contains an 8700 Revenue Center database. Using the HHT, an operator can post orders, close guest checks, and perform almost every other operation that is available on a UWS. Ex. 1027 at 1-15.

723. “The Special Count may be set for those Menu Items that are programmed for limited availability (Menu Item Class Type Definition #16 - Check Menu Item Availability Before Allowing Sale - is set ON.) The Special Count is reduced each time a Menu Item is ordered. When the count reaches zero, the Menu Item automatically shifts to ‘Not Available.’” Ex. 1027 at 11-28.

724. “The limited availability menu item feature allows you to define menu items to have a limited quantity available: After a programmed number of sales are posted, the system indicates that the menu item is unavailable when that menu item is entered. Example: at the beginning of his shift, the manager entered the number of daily special s available during lunch, near the end of the lunch shift, Mary entered an order for five daily specials. She received the system prompt: "ONLY 4 DAILY SPECIAL REMAINING." Immediately after service totalling her check, her order, George, tried to enter an order for the daily special and

received this message: "NO MORE DAILY SPECIAL REMAINING." Ex. 1027 at 5-13.

725. Digestor discloses “a software system that automatically re-authors arbitrary documents form the world-wide web to display appropriately on small screen devices.” Ex. 1002 at 1075. Additionally, the patent examiner found this element in the Micros 8700 Pub. Ex. 1012 (Jan. 20, 2010 Final Rejection) at 792.

726. A POSITA would have found it obvious to implement the Micros 8700 system using Internet technology, and combine it with Digestor’s re-authoring technology to enable access to the Micros 8700 HMS over the Internet by wireless handheld devices and other client devices.

g. wherein the communications control software is enabled to act as a real time interface between the elements of the system and any applicable communications protocol,

727. The Micros 8700 UM discloses software enabled to act as a real time interface between the components of the system and the communications protocols used by those components.

728. “The 8700 is an integrated Point-Of-Sale (POS) system comprising modular hardware and flexible, user-configured software. In addition to POS operations, the 8700 System also provides: Printing and Video Display Requisition, Sales and Cost Reporting, Labor Scheduling and Time Keeping,

Interfaces to third-party peripheral equipment and software, including Property Management Systems. An 8700 System includes personal computer(s), User Workstations, printers, peripheral devices, and software. The 8700's modular design allows great flexibility in configuring a system that is both cost effective and functional." Ex. 1027 at 1-2.

729. "The Special Count may be set for those Menu Items that are programmed for limited availability (Menu Item Class Type Definition #16 - Check Menu Item Availability Before Allowing Sale - is set ON.) The Special Count is reduced each time a Menu Item is ordered. When the count reaches zero, the Menu Item automatically shifts to "Not Available"." Ex. 1027 at 11-28.

730. "The limited availability menu item feature allows you to define menu items to have a limited quantity available: After a programmed number of sales are posted, the system indicates that the menu item is unavailable when that menu item is entered. Example: at the beginning of his shift, the manager entered the number of daily special s available during lunch, near the end of the lunch shift, Mary entered an order for five daily specials. She received the system prompt: "ONLY 4 DAILY SPECIAL REMAINING." Immediately after service totalling her check, her order, George, tried to enter an order for the daily special and

received this message: "NO MORE DAILY SPECIAL REMAINING." Ex. 1027 at 5-13.

731. A POSITA would have understood that the Micros 8700 operating software acted as a real-time interface between the components of the system (such as user workstations and HHTs) and the applicable communications protocols used by these devices, because the system is described as an integrated system capable of providing synchronized data (including, e.g. the count of available items) to the various devices in the system. A POSITA would have found it obvious to replicate this functionality when implementing the Micros 8700 HMS using Internet technology.

- h. wherein the communications control software is further enabled to automatically format a programmed handheld configuration for display as cascaded sets of linked graphical user interface screens appropriate for a customized display layout of at least two different wireless handheld computing device display sizes in the same connected system, and wherein a cascaded set of linked graphical user interface screens for a wireless handheld computing device in the system includes a different number of user interface screens from at least one other wireless handheld computing device in the system, and**

732. The Micros 8700 UM discloses displaying cascaded sets of linked graphical user interface screens appropriate for the customized display layout of an HHT.

Previous Screen



Procedure

Press [Previous Screen].

The last, user-defined touchscreen is displayed.



Note

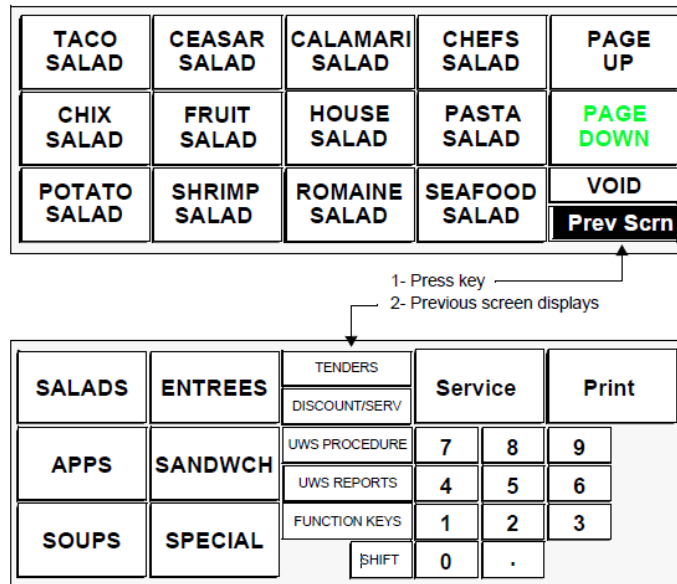
If several screens have been displayed and you wish to go back two or more screens, press [Previous Screen] as many times as necessary until the desired screen displays. However, note that [Previous Screen] disregards (or skips) SLU screens.

Prompts

None.

Ex. 1027 at 3-7.

Mary pressed [Salads] by mistake on her main food and beverage touchscreen. Luckily, there is a [Previous Screen] key programmed on the SLU screen that is generated by [Salads]. When Mary presses [Previous Screen], the Main Food and Beverage Touchscreen is displayed again. This scenario is illustrated below.



Ex. 1027 at 3-8.

733. Digestor teaches generating customized display layouts with cascaded sets of linked user interface screens for wireless handheld devices that have varying screen sizes.

734. “Digester is a software system which automatically re-authors arbitrary documents from the world-wide web to display appropriately on small screen devices such as PDAs and cellular phones, providing device independent access to the web. Digester is implemented as an HTTP proxy which dynamically re-authors requested web pages using a heuristic planning algorithm and a set of structural page transformations to achieve the best looking document for a given display size.” Ex. 1022 at 1075.

735. “The overall process of deciding which combination of techniques to apply to a given page for a given client display seems at first to require some form of human artistic ability. However, an automatic re-authoring algorithm has been developed which captures many of the heuristics used in the manual re-authoring exercise, and which does a fairly good job of producing good looking pages for a given display. The basic approach is that of a heuristic planner which searches a document transformation space in a best-first manner.” Ex. 1022 at 1079.

736.

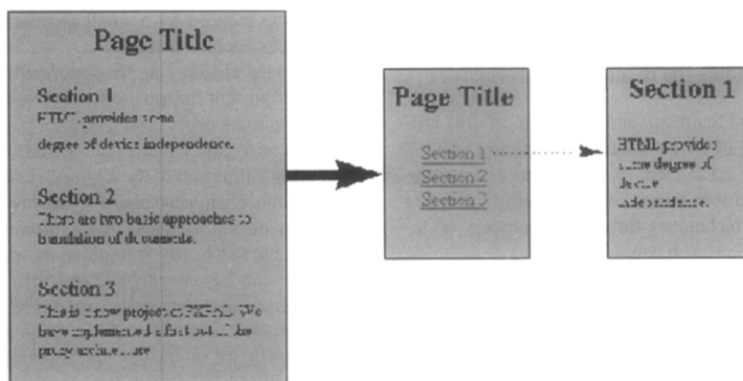


Fig. 3.

Ex. 1022 at Fig. 3; *see also id.* at 1077 (“The contents of each section is elided from the document and the section header is converted into a hypertext link which, when selected, loads the elided content.”))

737. A POSITA would have understood that the Micros 8700 UM disclosed generating customized display layouts for devices of various screen sizes, such as User Workstations and HHTs. It would have been obvious to a POSITA to generate customized display layouts for other types of wireless handheld computing devices, as disclosed for example in Digestor, to enable the Micros 8700 HMS system to work with the various types of wireless handheld devices available in the market. *See, e.g.* Ex. 1022 at 1075 (describing various devices). It would further have been obvious to a POSITA that the different sizes of display screens on such devices would result in customized layouts having different numbers of screens.

- i. wherein the system is enabled for real time synchronous transmission of the configured hospitality application information to the wireless handheld computing device, the web server and the web page and real time synchronous transmissions of inputs responding to the configured hospitality application information from the wireless handheld computing device, or the web server or the web page.**

738. The analysis for this claim element is the same as set forth above in the corresponding element of claim 1 because of the similarities of the claim language.

14. Claim 14.

- a. The information management and real time synchronous communications system in accordance with claim 13, further including a communications systemic relationship comprising:**

739. The analysis for this claim element is the same as set forth above in the corresponding element of claims 2 and 13 because of the similarities of the claim language.

- b. a) A Wireless Hub Application;**

740. The analysis for this claim element is the same as set forth above in the corresponding element of claims 2 and 13 because of the similarities of the claim language.

c. b) A Web Hub Application;

741. The analysis for this claim element is the same as set forth above in the corresponding element of claims 2 and 13 because of the similarities of the claim language.

d. c) Linked Databases Between two or more different Hospitality Applications; and

742. The analysis for this claim element is the same as set forth above in the corresponding element of claims 2 and 13 because of the similarities of the claim language.

e. d) A Communications Setup Application.

743. The analysis for this claim element is the same as set forth above in the corresponding element of claims 2 and 13 because of the similarities of the claim language.

15. Claim 15.

a. The information management and real time synchronous communications system of claim 13, wherein the system is enabled to automatically import the information from the POS (point of sale) database into the system.

744. The analysis for this claim element is the same as set forth above in the corresponding element of claim 3 because of the similarities of the claim language.

16. Claim 16.

- a. The information management and real time synchronous communications system of claim 13, wherein at least two different hospitality applications are integrated between and with one another.**

745. The analysis for this claim element is the same as set forth above in the corresponding element of claim 4 because of the similarities of the claim language.

17. Claim 17.

- a. The information management and real time synchronous communications system in accordance with claim 13, wherein the hospitality application information also includes the completion of payment processing.**

746. The analysis for this claim element is the same as set forth above in the corresponding element of claim 5 because of the similarities of the claim language.

18. Claim 18.

- a. The information management and real time synchronous communications system in accordance claim 13, wherein the configured wireless handheld computing device is a smart phone.**

747. The analysis for this claim element is the same as set forth above in the corresponding element of claim 6 because of the similarities of the claim language.

748. It is my opinion that Micros 8700 Pub in view of Digestor renders claims 1-18 of the '077 patent obvious.

B. Obviousness of Claims 13-18 Based on Blinn and Digestor.

749. It is my understanding that there are many legal bases under which two prior art references could be combined. It is my opinion that a person of ordinary skill in the art would have found it obvious to combine the system of Blinn with the wireless handheld devices disclosed in Digestor because it would be combining use of known techniques to improve a similar device in the same way.

750. Blinn teaches a method and system for processing electronic sales transactions. The method and system described in Blinn set forth communications among client devices (including wireless personal digital assistants and standalone computers), the internet, and a merchant system including a database and communications control means.

751. Blinn maps on to the '325 patent according to the following figures:

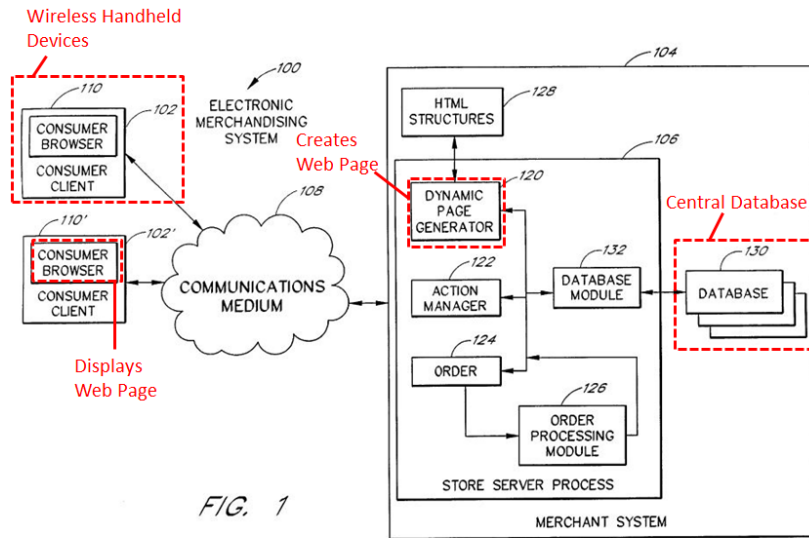


FIG. 1

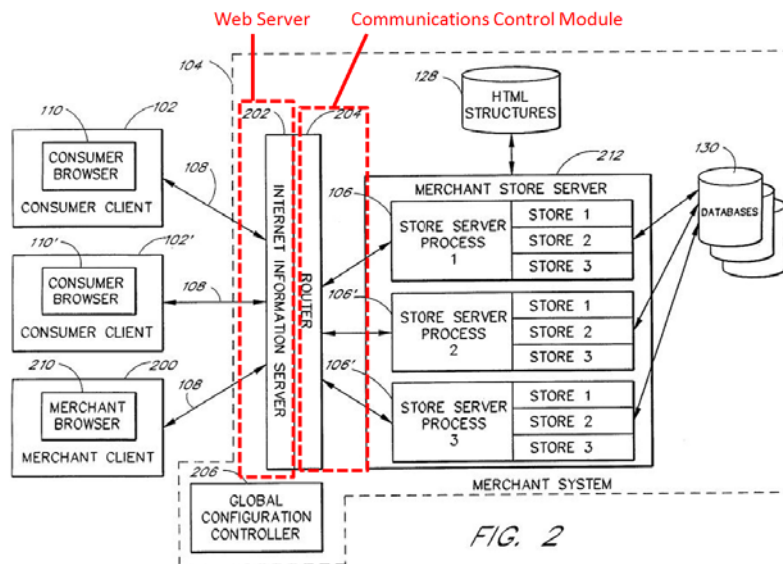


FIG. 2

752. Digestor describes “a software system which automatically re-authors arbitrary documents from the world-wide web to display on small screen devices such as PDAs and cellular phones, providing device independent access to the

web.” Ex. 1022 at Abstract. Digester discloses four approaches for formatting documents for display on small screens, including: (1) device-specific authoring, (2) multiple-device authoring, (3) client-side navigation, and (4) automatic re-authoring. *Id.* at 1076. Automatic re-authoring can be performed at either the server that serves the documents, the client, or an intermediate device. *Id.*

Because both Blinn and Digester discuss display of data on multiple devices with different display configurations, it would have been obvious to a POSITA to combine Digester’s customized display layout teachings to the client devices from Blinn. This combination renders each of the claims 13-18 of the ’077 patent obvious.

1. Claim 13.

a. An information management and real time synchronous communications system for use with wireless handheld computing devices and the internet comprising

753. Blinn discloses a system for processing electronic sales transactions through using an information management and synchronous communications system which uses wireless handheld computing devices and the internet.

754. “The present invention provides a method and system for processing electronic sales transactions. In a preferred embodiment, an electronic

merchandising system allows merchants to create electronic orders which are easily adaptable for different sales situations.” Ex. 1025 at Abstract.

755. “Focusing now on the communications medium 108 as shown in FIG. 2, the presently preferred communications medium 108 includes the Internet which is a global network of computers. The structure of the Internet, which is well known to those of ordinary skill in the art, includes a network backbone with networks branching from the backbone.” Ex. 1025 at 9:10-16.

756. “In other embodiments, the consumer computer 102 could, for example, be a computer workstation, a local area network of computers, an interactive television, an interactive kiosk, a personal digital assistant, an interactive wireless communications device or the like which can interact with the communications medium 108.” Ex. 1025 at 10:9-14; *see also* Ex. 1025 at Abstract; Figs. 1, 2 at 102 and 108; 9:11-12; 10:12-14; 13:36-43.

b. a) a master database connected in said system and configured to store hospitality application information pursuant to a master database file structure;

757. Blinn discloses a master database , identified as 130 in Figures 1 and 2, hosted by a centralized merchant system computer, which as a merchant system is capable of containing hospitality application information pursuant to a master database file structure, such as a Structured Query Language database.

758. Blinn also discloses that “. . . the store server process 106 is in communication with one or more databases 130 with a database module 132.” Ex. 1025 at 8:9-11.

759. “The merchant system 104 includes an internet information server 202, a router 204, a global configuration controller 205, at least one merchant store server 212, a storage medium for HTML structures 128 and one or more databases 130.” Ex. 1025 at 11:31-41.

760. “Preferably, the databases 130 are Structured Query Language (SQL) databases 130.” Ex. 1025 at 13:13-14; *see also* 13:9-22; Figs. 1 and 2 at 130.

761. It would have been obvious to one of ordinary skill in the art that the database 130 could have contained hospitality applications and data as evidenced by the patent speaking to the availability to modify based on a “merchant’s unique sales transactions,” which a POSITA would understand could include hospitality-specific operations. *See* Ex. 1025 at 38:43-47; *see also* Ex. 1025 at 1:11-18, 1:30-38, 4:66-5:3. For example, it was known in the art to sell hospitality goods and services over the internet such as hotel rooms. *See* discussion regarding MARHSA computerized reservations at Ex. 1021 at Fig. 5.36 and 230-31. Indeed, in Blinn, the inventors identified in a preferred embodiment the flexibility to include adaptable electronic orders for different sales situations. Ex. 1025 at 1:67-2:3.

- c. b) at least one wireless handheld computing device connected in said system and configured to display said hospitality application information;**

762. Blinn discloses an interactive wireless communications device such as a personal digital assistant which interacts with a communications medium and includes software allowing access to the merchant system such that the device displays the information requested from the system. The handheld wireless computing device is referenced by the consumer client 102. Ex. 1025 at Figs. 1 and 2 at 102; 10:9-32.

763. Blinn also discloses that “. . . the consumer computer 102 could, for example, be a computer workstation, a local area network of computers, an interactive television, an interactive kiosk, a personal digital assistant, an interactive wireless communications device or the like which can interact with the communications medium 108.” Ex. 1025 at 10:9-14.

764. “For example, the communications medium 108 can include . . . wireless data transmission systems.” Ex. 1025 at 9:23-28.

765. It would have been obvious to one of ordinary skill in the art that the consumer computer 102 could have stored hospitality applications and data. *See* Ex. 1025 at 38:43-47; *see also* Ex. 1025 at 1:11-18, 1:30-38, 4:66-5:3.

- d. c) at least one web server connected in said system;**

766. Blinn discloses an Internet information server which works in conjunction with the merchant system. *See* Ex. 1025 at Fig. 2 at 202; 1:19-29; 12:23-34.

767. “Typically, a Web site is an Internet-connected computer or computer system which runs server software for serving information using the standard protocols of the World Wide Web.” Ex. 1025 1:22-25.

768. “The Internet information server 202 is a World Wide Web server. The Internet information server 202 supports the use of virtual servers, allowing multiple web servers to run on a single computer. The Internet information server 202 also uses the HyperText Transmission Protocol (HTTP) to communicate with the consumer browsers 110 or the merchant browser 210.” Ex. 1025 at 12:23-29.

- e. **d) at least one web page connected in said system and configured to display said hospitality application information; and**

769. Blinn discloses web pages hosted by merchants created by a dynamic page generator on a store server process which provides the web page to the consumer client. Ex. 1025 at Fig. 1 at 102, 106, 110 and 120; Fig. 2 at 106; 1:22-29; 8:36-44.

770. “Typically, a Web site is an Internet-connected computer or computer system which runs server software for serving information using the standard protocols of the World Wide Web.” Ex. 1025 at 1:22-25.

771. “When a consumer directs the consumer browser 110 on the consumer computer to access the merchant system 104, the dynamic page generator 120 creates web pages with illustrate different watches offered for sale.” Ex. 1025 at 8:36-39.

772. It would have been obvious to one of ordinary skill in the art that the web page could have been configured to display said hospitality application information. *See* Ex. 1025 at 38:43-47; *see also* Ex. 1025 at 1:11-18, 1:30-38, 4:66-5:3.

- f. **e) real time communications control software enabled to link and synchronize hospitality application information simultaneously between the master database, wireless handheld computing device, web server and web page, wherein the communications control software is enabled to utilize parameters from the master database file structure to synchronize the hospitality application information in real time between the master database, at least one wireless handheld computing device, at least one web server and at least one web page such that substantially the same information comprising the hospitality application information is capable of being displayed on the wireless handheld computing device, at least one web page and other display screens of the synchronized system, such that the hospitality application information is synchronized between any connected users,**

773. Blinn discloses communications control software running on the router which acts as an interface between the internet and the store server process.

774. “In the preferred embodiment, the router 204 and the merchant store server 212 utilize the global configuration information to interconnect the consumer browsers 110 with the store server processes 106.” Ex. 1025 at 12:50-53.

775. Additionally, the communications control module functionality is performed by the TCP/IP stack within the merchant system 104 and runs on software with the Windows® NT operating system.

776. “The Microsoft Windows® NT operating system includes a TCP/IP stack which handles all incoming and outgoing message traffic passed over the communications medium 108.” Ex. 1025 at 11:65-12:1.

777. Blinn further discloses applications and data synchronized in real time across the central database described above in 13a, the wireless personal digital assistant described in element 13b, the Web server described in 13c, and the Web page described in 13d.

778. “The consumer client 102 contains a consumer browser 110. The consumer browser 110 communicates with the store server process 106 and displays the web documents created by the store server process 106. Each store server process 106 provides a server architecture that supports the presentation and administration of a virtual store. Preferably, the store server process 106 comprises

a number of components including a dynamic page generator 120, an action manager 122, one or more orders 124 and an order processing module 126. Furthermore, in communication with the store server process 106 is a storage device such as a hard disk which contains HTML structures 128 which define the layout of different HTML pages. In addition, the store server process 106 is in communication with one or more databases 130 with a database module 132.” Ex. 1025 at 7:64-8:11.

779. “In other embodiments, the consumer computer 102 could, for example, be a computer workstation, a local area network of computers, an interactive television, an interactive kiosk, a personal digital assistant, an interactive wireless communications device or the like which can interact with the communications medium 108. While in such systems the operating systems will differ, they will continue to provide the appropriate communications protocols needed to establish communication links with the communications medium 108.” Ex. 1025 at 10:9-18.

780. “During a typical shopping session, the consumer browser 110 and the store server process 106 communicate with each other over the communications medium 108. Typically, the consumer browser 110 sends URL addresses to the store server process 106, and the store server process 106 responds with HTML

documents. The HTML documents may contain registration information, product offerings, promotional advertisements, order forms, etc.” Ex. 1025 at 13:36-43.

781. “Associated with the shopper table 300 is the shopper manager 320. The shopper manager 320 adds, modifies and deletes the entries existing in the shopper table 300.” Ex. 1025 at 16:1-6.

782. “The product variant table 802 is also merchant defined and stores information for a specific product within the product family. Each row in the product variant table 802 is a record corresponding to a particular product while each column contains information related to the products. For example, the product variant columns may contain a product's family identifier, stock keeping unit (sku), a color value, a size value, etc. The format of the product family table 800 is merchant defined and can contain wide variety of product characteristics. The merchant specifies the location of a query which queries the product variant table 802 in the registry.” Ex. 1025 at 16:34-45.

783. “In addition, the URL can contain the number of items (quantity) and the price of the items.” Ex. 1025 at 18:26-28.

784. “The OrderItemValidate component 1226*b* is configured to check the order 124 for required items, and verify that the required items exist.” Ex. 1025 at 24:36-38.

785. “The components in the inventory stage 386 verify that every selected item is in stock.” Ex. 1025 at 29:61-62.

786. “The components in the inventory stage 386 verify that every selected item is in stock.” Ex. 1025 at 29:61-62; *see also* Ex. 1025 at Fig. 6.

787. It would have been obvious to a POSITA that upon the store server process and consumer browsers on computers and handheld devices becoming connected, the sales and item data maintained on the store server databases would be sent to the consumer browsers for rendering on the consumer computer and wireless handheld device, and thereby the data and applications on the store server process and the consumer computers and handheld devices would become synchronized (as that term is properly construed) in real time. This is further evidenced by the inventory stage, which adjusts the quantities in the database upon a sale made via one of the consumer browsers such that future downloads reflect the adjusted inventor levels, thereby achieving real time synchronization. Ex. 1025 at 36:29-51 and 38:25:31.

- g. wherein the communications control software is enabled to act as a real time interface between the elements of the system and any applicable communications protocol,**

788. Blinn discloses software acting as a real time interface between the elements of the system and the applicable communications protocol such as the

software running on the router handling all incoming and outgoing message traffic.
See Ex. 1025 at 1:25-29; 8:9-11; 10:9-18; 11:67; 13:36-43.

789. “In the preferred embodiment, the router 204 and the merchant store server 212 utilize the global configuration information to interconnect the consumer browsers 110 with the store server processes 106.” Ex. 1025 at 12:50-53.

790. Additionally, the communications control module functionality is performed by the TCP/IP stack within the merchant system 104 and runs on software with the Windows® NT operating system.

791. “The Microsoft Windows® NT operating system includes a TCP/IP stack which handles all incoming and outgoing message traffic passed over the communications medium 108.” Ex. 1025 at 11:65-12:1.

- h. wherein the communications control software is enabled to automatically and simultaneously configure the hospitality application information for display on both the wireless handheld computing device and the web page in conformity with a customized display layout unique to the wireless handheld computing device or the web page, wherein said customized display layout is compatible with the displayable size of the handheld computing device display screen or the web page, and**

792. Blinn discloses the communications control software described above as automatically and simultaneously configuring the hospitality application

information for display on the wireless handheld computing device described in 13b and the web page described in 13d in conformity with the customized display layout through customized HTML pages unique to the wireless handheld computing device described in 13b or the web page described in 13d, such that the customized HTML pages are compatible with the handheld computing device described in 13b or the web page described in 13d. Ex. 1025 at Fig. 2, 7:64-8:17.

793. “Broadly speaking, the dynamic page generator 120 responds to consumer browser 110 requests for the HTML pages. The dynamic page generator 120 can generate customized HTML pages with the HTML structures 128.” Ex. 1025 at 8:12-14.

794. Additionally, Digestor discloses customizing the display for handheld graphic user interfaces.

795. “Finally, automatic re-authoring involves developing software which can take an arbitrary web document designed for the desktop, along with characteristics of the target display device, and re-author the document through a series of transformations so that it can be appropriately displayed on the device. This process can be performed either on the client, on the server, or on an intermediary HTTP proxy server (as in [7]) which exists solely for the purpose of providing these transformation services. An example of this latter approach is the

UC Berkeley Pythia proxy [9], which performs transformations on web page images, although the focus of this work is on minimizing page retrieval time, not on producing the most appropriate page layout for the display device.” Ex. 1022 at 2.

796. “Automatic re-authoring is thus the ideal approach to providing broad access to the web from a wide range of devices, if it can be made to produce legible, navigable and aesthetically pleasing re-authored documents without loss of information.” Ex. 1022 at 1077.

797. A POSITA would have understood that Blinn’s ability to create customized HTML pages would have permitted the HTML page to be customized for display on a wireless handheld device. Additionally, a POSITA would have found it obvious to combine the Digestor disclosure of re-authoring information for handheld devices with its disclosure of PDAs used in the Blinn system such that the web pages would be displayed appropriately on the PDA.

- i. wherein the communications control software is further enabled to automatically format a programmed handheld configuration for display as cascaded sets of linked graphical user interface screens appropriate for a customized display layout of at least two different wireless handheld computing device display sizes in the same connected system, and**

798. Blinn discloses the communications control software, in conjunction with the dynamic page generator on the merchant system, is enabled to format a

programmed handheld configuration for display as cascaded sets of linked graphical user interface screens, including hyperlinks to related pages, on handheld computing devices such as PDAs.

799. “Broadly speaking, the dynamic page generator 120 responds to consumer browser 110 requests for the HTML pages. The dynamic page generator 120 can generate customized HTML pages with the HTML structures 128.” Ex. 1025 at 8:12-14.

800. “. . . the consumer computer 102 could, for example, be a computer workstation, a local area network of computers, an interactive television, an interactive kiosk, a personal digital assistant, an interactive wireless communications device or the like which can interact with the communications medium 108.” Ex. 1025 at 10:9-14.

801. “The dynamic page generator 120 generates the HTML documents sent to the consumer browser 110. The dynamic page generator 120 dynamically creates HTML documents in response to commands generated by the consumer browser 110. The commands generated by the consumer browser 110 utilize the standard GET/POST format of the HyperText Transport Protocol (HTTP). For example, as discussed in more detail below, the buttons or other content items in an HTML page contain a hyperlink to a URL.” Ex. 1025 at 13:44-52.

802. Additionally, Digestor discloses customizing the display for handheld graphic user interfaces.

803. “Finally, automatic re-authoring involves developing software which can take an arbitrary web document designed for the desktop, along with characteristics of the target display device, and re-author the document through a series of transformations so that it can be appropriately displayed on the device. This process can be performed either on the client, on the server, or on an intermediary HTTP proxy server (as in [7]) which exists solely for the purpose of providing these transformation services. An example of this latter approach is the UC Berkeley Pythia proxy [9], which performs transformations on web page images, although the focus of this work is on minimizing page retrieval time, not on producing the most appropriate page layout for the display device.” Ex. 1022 at 1076.

804. “Automatic re-authoring is thus the ideal approach to providing broad access to the web from a wide range of devices, if it can be made to produce legible, navigable and aesthetically pleasing re-authored documents without loss of information.” Ex. 1022 at 1077.

805. A POSITA would have found it obvious to combine the Digestor disclosure of re-authoring information for handheld devices with its disclosure of

PDA's used in the Blinn system such that the web pages would be displayed appropriately on the PDA.

- j. wherein a cascaded set of linked graphical user interface screens for a wireless handheld computing device in the system includes a different number of user interface screens from at least one other wireless handheld computing device in the system, and**

806. Digestor discloses the ability to re-author web documents based on the “the target display device, and re-author the document through a series of transformations so that it can be appropriately displayed on the device. This process can be performed either on the client, on the server, or on an intermediary HTTP proxy server (as in [7]) which exists solely for the purpose of providing these transformation services. An example of this latter approach is the UC Berkeley Pythia proxy [9], which performs transformations on web page images, although the focus of this work is on minimizing page retrieval time, not on producing the most appropriate page layout for the display device.” Ex. 1022 at 1076.

807. A POSITA would have found it obvious to combine the Digestor disclosure of re-authoring information for handheld devices with its disclosure of PDA's used in the Blinn system such that the web pages would be displayed appropriately unique handheld devices.

- k. wherein the system is enabled for real time synchronous transmission of the configured hospitality application information to the wireless handheld computing device, the web server and the web page and real time synchronous transmissions of inputs responding to the configured hospitality application information from the wireless handheld computing device, or the web server or the web page.**

808. Blinn discloses a merchant system for handling “all incoming and outgoing message traffic passed over the communications medium 108. The computers in the merchant system 104, can, however, include a wide range of devices which provide information, graphics or text. These devices may contain specialized operating systems which communicate using their respective communications protocols.” Ex. 1025 at 11:66-12:6.

809. Blinn further discusses the real time, synchronous nature of its system.

810. “The consumer client 102 contains a consumer browser 110. The consumer browser 110 communicates with the store server process 106 and displays the web documents created by the store server process 106. Each store server process 106 provides a server architecture that supports the presentation and administration of a virtual store. Preferably, the store server process 106 comprises a number of components including a dynamic page generator 120, an action manager 122, one or more orders 124 and an order processing module 126. Furthermore, in communication with the store server process 106 is a storage

device such as a hard disk which contains HTML structures 128 which define the layout of different HTML pages. In addition, the store server process 106 is in communication with one or more databases 130 with a database module 132.” Ex. 1025 at 7:64-8:11.

811. “In other embodiments, the consumer computer 102 could, for example, be a computer workstation, a local area network of computers, an interactive television, an interactive kiosk, a personal digital assistant, an interactive wireless communications device or the like which can interact with the communications medium 108. While in such systems the operating systems will differ, they will continue to provide the appropriate communications protocols needed to establish communication links with the communications medium 108.” Ex. 1025 at 10:9-18.

812. “Associated with the shopper table 300 is the shopper manager 320. The shopper manager 320 adds, modifies and deletes the entries existing in the shopper table 300.” Ex. 1025 at 16:1-6.

813. “The product variant table 802 is also merchant defined and stores information for a specific product within the product family. Each row in the product variant table 802 is a record corresponding to a particular product while each column contains information related to the products. For example, the product

variant columns may contain a product's family identifier, stock keeping unit (sku), a color value, a size value, etc. The format of the product family table 800 is merchant defined and can contain wide variety of product characteristics. The merchant specifies the location of a query which queries the product variant table 802 in the registry.” Ex. 1025 at 16:34-45.

814. “In addition, the URL can contain the number of items (quantity) and the price of the items.” Ex. 1025 at 18:26-28.

815. “The OrderItemValidate component 1226*b* is configured to check the order 124 for required items, and verify that the required items exist.” Ex. 1025 at 24:36-38.

816. “The components in the inventory stage 386 verify that every selected item is in stock.” Ex. 1025 at 29:61-62.

817. “When the ReduceLocalInventory component 1282*e* receives the order 124, the ReduceLocalInventory component 1282*e* reduces the inventory in an inventory database 130 by the number of products ordered. The ReduceLocalInventory component 1282*e* uses the sku key-value pairs and the quantity key-value pairs to specify a database query which deducts the quantity amounts from the database 130.” Ex. 1025 at 38:25-31. *See also* Ex. 1025 at Figure 6.

2. Claim 14.

a. The information management and real time synchronous communications system in accordance with claim 13, further including a communications systemic relationship comprising

818. As discussed in claim 13 above, Blinn discloses the information management and real time synchronous communications system in accordance with claim 13 described above including a communications systemic relationship.

819. “The present invention provides a method and system for processing electronic sales transactions. In a preferred embodiment, an electronic merchandising system allows merchants to create electronic orders which are easily adaptable for different sales situations. The preferred electronic order comprises flexible blackboards which allow merchants to add sales information with what are called key-value pairs. In the preferred embodiment, the order is an object which contains at least one order blackboard and one or more item blackboards. In addition, the preferred embodiment contains an order processing module with multiple stages which process the order. The preferred stages include a product information stage, a merchant information stage, a shopper information stage, an order initialization stage, an order check stage, an item price adjust stage, an order price adjust stage, a shipping stage, a handling stage, a tax stage, an order

total stage, an inventory stage, a payment stage and an accept stage.” Ex. 1025 at Abstract.

b. a) A Wireless Hub Application;

820. Blinn discloses a “consumer computer 102 [that] could, for example, be a computer workstation, a local area network of computers, an interactive television, an interactive kiosk, a personal digital assistant, an interactive wireless communications device or the like which can interact with the communications medium 108. While in such systems the operating systems will differ, they will continue to provide the appropriate communications protocols needed to establish communication links with the communications medium 108.” Ex. 1025 at 10:9-18.

821. The Wireless Hub Application is served by the communications medium 108, such as the internet, through which the consumer client communicates with the merchant system 104.

c. b) A Web Hub Application;

822. Blinn discloses an “Internet information server 202 is a World Wide Web server. The Internet information server 202 supports the use of virtual servers, allowing multiple web servers to run on a single computer.” Ex. 1025 at 12:23-27; *see also id.* at 7:34-49, 12:24-34.

823. The Web Hub Application sits in the merchant system at the Internet Information Server allowing the consumer client communicates with the merchant system 104 over the internet.

d. c) Linked Databases Between two or more different Hospitality Applications; and

824. Blinn discloses linked databases between two or more different hospitality applications through store server processes in communication with multiple databases.

825. “In the preferred embodiment, the consumer browser 110 is a software program which allows a consumer to access the merchant system 104 over the communications medium 108. In the preferred embodiment, the consumer browser 110 is the Microsoft Internet Explorer version 3.0 developed by Microsoft Corporation. One of ordinary skill in the art, however, will recognize that numerous other types of access software could also be used to implement the present invention. These other types of access software could, for example, be other types of Internet browsers such as the Netscape Navigator developed by Netscape, Inc., or other types of client applications including custom network browsers, two-way communications software, cable modem software, point-to-point software and the like.” Ex. 1025 at 10:19-32.

e. d) A Communications Setup Application.

826. Blinn discloses a communications setup application through its two-way communications software, cable modem software and network browsers.

827. “In the preferred embodiment, the consumer browser 110 is a software program which allows a consumer to access the merchant system 104 over the communications medium 108. In the preferred embodiment, the consumer browser 110 is the Microsoft Internet Explorer version 3.0 developed by Microsoft Corporation. One of ordinary skill in the art, however, will recognize that numerous other types of access software could also be used to implement the present invention. These other types of access software could, for example, be other types of Internet browsers such as the Netscape Navigator developed by Netscape, Inc., or other types of client applications including custom network browsers, two-way communications software, cable modem software, point-to-point software and the like.” Ex. 1025 at 10:19-32.

3. Claim 15.

- a. The information management and real time synchronous communications system of claim 13, wherein the system is enabled to automatically import the information from the POS (point of sale) database into the system.**

828. Blinn discloses the system automatically importing information from the Point of Sale software database into the system from the generation of purchase orders to saving the purchase order in a specified database.

829. “The POGenPipe component 1282b generates a purchase order by directing the dynamic page generator 120 to generate an HTML purchase order with a purchase order HTML template. The POGenPipe component 1282b then uses standard techniques such as named pipes to direct the dynamic page generator 120 to send the HTML purchase order to another program. The SaveOrderToDb component 1282c uses well-known database techniques to save a purchase order in a specified database 130. The SaveItemsToDb component 1282d uses well-known database techniques to saves information about the purchased items to a specified database 130.” Ex. 1025 at 30:60-31:4. *See also*, Ex. 1025 at 30:29-39.

4. Claim 16.

- a. The information management and real time synchronous communications system of claim 13, wherein at least two different hospitality applications are integrated between and with one another.**

830. Blinn discloses the information management and real time synchronous communications system of claim 13 where numerous types of access software are used to implement the system permitting at least two different hospitality applications integrated between and one another.

831. “In the preferred embodiment, the consumer browser 110 is a software program which allows a consumer to access the merchant system 104 over the communications medium 108. In the preferred embodiment, the consumer browser 110 is the Microsoft Internet Explorer version 3.0 developed by Microsoft Corporation. One of ordinary skill in the art, however, will recognize that numerous other types of access software could also be used to implement the present invention. These other types of access software could, for example, be other types of Internet browsers such as the Netscape Navigator developed by Netscape, Inc., or other types of client applications including custom network browsers, two-way communications software, cable modem software, point-to-point software and the like.” Ex. 1025 at 10:19-32.

832. It would have been obvious to one of ordinary skill in the art that the web page could have been configured to display said hospitality application information. *See* Ex. 1025 at 38:43-47; *see also* Ex. 1025 at 1:11-18, 1:30-38, 4:66-5:3.

5. Claim 17.

- a. The information management and real time synchronous communications system in accordance with claim 13, wherein the hospitality application information also includes the completion of payment processing.**

833. Blinn discloses the information management and real time synchronous communications system of claim 13 where credit card payments are one form of implementing the completion of payment processing in the hospitality application information.

834. "The components in the payment stage 388 approve credit-card payments. A payment default component 1274 sets the payment-- auth-- code key-value pair in the order blackboard 350 to "FAITH." While the preferred embodiment does not have a payment optional component 1276 which performs card authorization, software such as VeriFone's Point of Sale (vPOS) software could be used. VeriFone's Point of Sale (vPOS) software is publicly available and can be obtained from VeriFone, Inc. The payment required component 1278

evaluates whether the value associated with the payment-- auth-- code key has been set.” Ex. 1025 at 30:29-39.

6. Claim 18.

- a. The information management and real time synchronous communications system in accordance claim 13, wherein the configured wireless handheld computing device is a smart phone.**

835. Blinn discloses the information management and real time synchronous communications system in accordance claim 13, where the personal digital assistant or interactive wireless communications device is a smart phone.

836. “In other embodiments, the consumer computer 102 could, for example, be a computer workstation, a local area network of computers, an interactive television, an interactive kiosk, a personal digital assistant, an interactive wireless communications device or the like which can interact with the communications medium 108.” Ex. 1025 at 10:9-18 (emphasis added).

837. Digestor discloses wireless handheld devices such as the Nokia 9000i cell phone, the Sony MagicLink, the Apple Newton with the AppPen NetHopper browser, and the Sharp MI-10. Ex. 1022 at 1075.

838. A POSITA would have understood that the “interactive wireless communications device” referred to in Blinn could encompass a smart phone such as the Nokia 9000i smartphone disclosed in Digestor.

839. Accordingly, in light of the foregoing, I believe that claims 13-18 are obvious due to Blinn in light of Digestor.

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

Executed on this 28th day of February, 2015.

By: 

Don Turnbull, Ph.D