2010-1291

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

MCKESSON TECHNOLOGIES INC.
(FORMERLY MCKESSON INFORMATION SOLUTIONS, LLC),

Plaintiff-Appellant,

v.

EPIC SYSTEMS CORPORATION,

Defendant-Appellee.

Appeal from the United States District Court for the Northern District of Georgia in Case No. 06-CV-2965, Chief Judge Jack T. Camp

OPENING EN BANC BRIEF OF PLAINTIFF-APPELLANT MCKESSON TECHNOLOGIES INC.

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CERTIFICATE OF INTEREST

Counsel for Appellant McKesson Technologies Inc. certifies the following:

1. The full name of every party or amicus represented by me is McKesson Technologies Inc. (formerly known as McKesson Information Solutions LLC).

2. The name of the real party in interest represented by me is McKesson Technologies Inc.

3. McKesson Corporation owns 100% of the stock of McKesson Technologies Inc. No parent corporations or publicly held companies hold 10% or more of the stock of McKesson Corporation.

4. The names of all law firms and the partners or associates that appeared for the party or amicus now represented by me in the trial court or agency or are expected to appear in this Court are:

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June 20, 2011
Date

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STATEMENT OF RELATED CASES

Pursuant to Federal Circuit Rule 47.5, counsel for Plaintiff-Appellant McKesson Technologies Inc. states that no appeal in this action was previously before this or any other appellate court.

On April 20, 2011, this Court ordered rehearing en banc in *Akamai Technologies, Inc. v. Limelight Networks, Inc.*, 629 F.3d 1311, on the following question, which is related to the questions presented in this case: "If separate entities each perform separate steps of a method claim, under what circumstances would that claim be directly infringed and to what extent would each of the parties be liable?" *Id.*, Order, Nos. 2009-1372, -1380, -1416, -1417. Accordingly, the *Akamai* case may be affected by this appeal.

JURISDICTIONAL STATEMENT

Pursuant to Federal Circuit Rule 28(a)(5), McKesson takes this appeal from a final judgment. The district court had jurisdiction under 28 U.S.C. §§ 1331 and 1338. On September 8, 2009, the district court granted summary judgment of non-infringement. On February 10, 2010, the district court directed the clerk to enter final judgment in favor of Defendant Epic Systems Corporation ("Epic"), and the clerk entered final judgment on February 11, 2010. This Court has jurisdiction under 28 U.S.C. § 1295(a)(1).

RESPONSE TO THE EN BANC COURT'S QUESTIONS

The Court posed two questions in its order granting rehearing en banc: "Does the nature of the relationship between the relevant actors—e.g., service provider/user; doctor/patient—affect the question of direct or indirect infringement liability?"; and, "[i]f separate entities each perform separate steps of a method claim, under what circumstances, if any, would either entity or any third party be liable for inducing infringement or for contributory infringement? *See Fromson v. Advance Offset Plate, Inc.*, 720 F.2d 1565 (Fed. Cir. 1983)."

The relevance of the relationship between two or more actors depends on the basis for their asserted liability, and there are multiple bases for holding one actor jointly or vicariously liable for the acts of another. As relevant here, an actor is liable for direct infringement if it: knowingly combines its actions with those of another to practice an entire patented method; performs some method steps while directing, controlling, inducing, or failing to exercise a right to control another's performance of the remaining steps; or otherwise acts in concert with another jointly to perform all of the steps. Those traditional joint or vicarious liability doctrines reflect centuries of judicial experience with determining when it is just to hold one person accountable for another's actions, and failure to apply them here would permit ready evasion of method claims. A party could negate the patentee's

right to exclude, and practice the patented method at will, simply by arranging for another to perform a single step of the process.

While no particular relationship between the actors is *necessary* under those traditional doctrines of joint or vicarious liability, the actors' relationship may be relevant or even conclusive. For example, a particularly close relationship may evidence, or in some instances establish, that an actor had the requisite knowledge, that it directed, controlled, or induced the other, or that it had an implied agreement with the other.

A third party is also liable for induced or contributory infringement if multiple actors together performed an entire patented method and the third party induced or contributed to that performance. In other words, a party otherwise liable for indirect infringement cannot escape liability by inducing or contributing to the performance of a patented method by multiple actors, as opposed to a single one. That is true whether or not any of the direct actors would be liable for direct infringement. Even if this Court were reluctant to hold one actor liable for direct infringement based on the combination of its conduct with another's, there would be no reason to absolve a *single* actor from liability for inducing all of that conduct.

Finally, this and other courts have held that an actor that performs some steps and induces or contributes to another's performance of the remaining steps is

liable for indirect infringement. In modern parlance, that could be viewed as a species of direct infringement under the principles discussed above, a type of induced or contributory infringement, or both. Regardless of the label, such an actor is legally responsible for the combined performance of the patented method.

STATEMENT OF THE CASE

On December 6, 2006, McKesson filed this patent infringement suit against Epic alleging infringement of United States Patent No. 6,757,898 ("the '898 patent"). Epic moved for summary judgment of non-infringement on January 14, 2008, claiming that McKesson could not prove that Epic induced anyone to infringe the patent because neither healthcare providers nor patients acting alone directly infringed. The district court denied that motion. A135. Epic renewed its motion for summary judgment of non-infringement on April 1, 2009. The district court granted that motion on September 8, 2009. A divided panel of this Court affirmed on April 12, 2011, and the Court granted en banc rehearing on May 26, 2011.

STATEMENT OF FACTS

A. McKesson's Patented Method

Although the Internet paved the way for new methods of communication in a host of industries, including healthcare, it has paradoxically posed challenges for doctor-patient communication. Patients desire efficient, secure, and trustworthy methods of communication with their doctors. *See* A39 Col. 3:44-59; *cf.* A1193.

Throughout the 1990s, however, there were no commercial patient-provider interfaces online. *See* A5398-99. The prior art included some references to communicating with doctors over the Internet, but solutions lacked integration, did not provide a robust communication framework, and left unaddressed a need to give patients access to their medical records. *See* A5412.

McKesson's '898 patent addressed that need by disclosing an automatic, electronic method of communication between healthcare providers and patients over personalized webpages. A39 Col. 4:41-44. By its terms, the only independent claim asserted in this action, claim 1, requires actions by two parties: A patient ("user") initiates a communication with a healthcare provider ("provider"), and the healthcare provider performs the remaining steps of the patented method. The claim states in full:

> 1. A method of automatically and electronically communicating between at least one health-care provider and a plurality of users serviced by the health-care provider, said method comprising the steps of:
>
> *initiating a communication by one of the plurality of users to the provider* for information, wherein the provider has established a preexisting medical record for each user;
>
> enabling communication by transporting the communication through a provider/patient interface over an electronic communication network to a Web site which is unique to the provider, whereupon the communication is automatically reformatted and processed or stored on a central server, said Web site supported by or in communication with the central server through a provider-patient interface service center;

> electronically comparing content of the communication with mapped content, which has been previously provided by the provider to the central server, to formulate a response as a static or dynamic object, or a combined static and dynamic object; and
>
> returning the response to the communication automatically to the user's computer, whereupon the response is read by the user or stored on the user's computer,
>
> said provider/patient interface providing a fully automated mechanism for generating a personalized page or area within the provider's Web site for each user serviced by the provider; and
>
> said patient-provider interface service center for dynamically assembling and delivering custom content to said user.

A59-60 Col. 44:60-45:24 (emphasis added).

This method facilitates direct communication between a patient and doctor while minimizing costs and staff training. *See* A42 Col. 10:29-32. The healthcare provider may "manag[e] call backs, as opposed to reacting to interruptions by call-ins." A42 Col. 9:37-39. The automated system also uses data that has already been entered into the doctor's scheduling and billing systems, limiting the extra work or effort needed to set up the interface. *See* A39 Col. 4:48-52.

In addition to controlling costs, the patented method makes patients safer. Because patients have their own personalized webpages, visit-specific content can be made available online following every visit to a healthcare provider. *See* A39 Col. 4:57-63. The online content "offers the patient significantly more information than he/she could have absorbed during a typical visit with the physician." *See* A39 Col. 4:63-65. More generally, patients can easily and efficiently

communicate with their own doctors, and they can be sure that the information they receive through the system is approved by their doctors and tailored to their individual needs. *See* A40 Col. 5:4-16. Patients may also submit appointment and prescription refill requests, for example, at their convenience. *See* A39-40 Col. 4:65-5:3.

B. Epic's Infringing MyChart Software

Epic develops and licenses software, including the accused MyChart software, to hospitals, doctors' offices, and other healthcare providers, which in turn enroll their patients as MyChart users. *See* A9, A1255. Patients enrolled in MyChart may communicate with their doctors through personalized webpages to access medical records and other materials, such as treatment and scheduling information. *See* A9; A1254-55. Use of MyChart results in an economic benefit to healthcare providers. *See* A5418.

Epic's licensed healthcare providers create the entire MyChart environment and rules of the road for patients, who must contractually agree to a set of Terms and Conditions before accessing MyChart. *See* A18; A5416. A healthcare provider establishes unique identifiers and passwords for enrolled patients. *See* A5415. The patient can initiate a communication by using a username and password established by the healthcare provider to log into a personalized MyChart webpage, which is also established by the healthcare provider. *See* A9; A1255.

During the login process, the healthcare provider must qualify and authenticate the patient. *See* A5415. The healthcare provider sends a "session cookie" to be stored on the patient's computer, without which the MyChart communication could not continue. A18; A5415. The cookie generates a token that attaches to any action taken by the patient, directs the patient's communication to appropriate files, and controls the other features and routines of the program. *See* A5415. The healthcare provider may terminate the patient's use of MyChart at any time. *See* A5416.

The healthcare provider controls the content of MyChart and has sole discretion over the options presented to the patient. *See* A18; A5416. Through a content-linking feature, a healthcare provider presents healthcare articles to a patient based on the patient's existing records. *See* A5416. After the patient successfully logs into the provider's website, MyChart automatically creates links to third-party content. *See, e.g.*, A3108; A5416; *see also* A3099. If a patient clicks on a link to third-party content, MyChart formulates a query on behalf of the user based on the user's age, sex, and standard industry diagnoses and medication codes. *See, e.g.*, A3108; A5417; *see also* A3099-100. The communication is sent by the healthcare provider's MyChart web server. A5417; *see also* A3100.

C. Procedural History

McKesson filed this action on December 6, 2006, asserting that Epic infringes independent claim 1 and dependent claims 2-10, 12-14, and 16-18 of the '898 patent. McKesson alleges that Epic induced its licensed healthcare providers and their patients to infringe the patented method by using the MyChart software.

The district court denied Epic's first motion for summary judgment of non-infringement, which relied on this Court's holding in *BMC Resources Inc. v. Paymentech, L.P.*, 498 F.3d 1373 (Fed. Cir. 2007), that a party is liable for joint infringement only if it directed or controlled the other joint infringer, A143. But the court later granted Epic's renewed motion for summary judgment after concluding that intervening decisions, including *Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318 (Fed. Cir. 2008), compelled it to find no direct infringement and, therefore, no inducement of infringement. The district court held that, under *Muniauction*, there is no infringement here as a matter of law because patients "choose whether or not to initiate a [MyChart] communication with the provider and the user is not under any obligation" to do so. A17.

While the district court thought that "the current state of the law requires that the Court grant Epic's motion for summary judgment," it questioned the wisdom of that outcome. A19. In the court's view, this Court's recent joint-infringement jurisprudence "severely limits the protection provided for patents which would

otherwise be valid and enforceable." *Id.* Indeed, "[a] potential infringer seeking to take advantage of a patented process could likely avoid infringement simply by designing its otherwise infringing product in a way that allows customers to decide initially whether to access it." A19-20. The court explained that "[t]his result weakens the policy of providing protection to those who devote the time and resources to develop otherwise novel and patentable methods." A20.

A split panel of this Court affirmed. The majority concluded that Epic is not liable for inducement because there can be no indirect infringement without direct infringement, and "[a] method claim is directly infringed only if each step of the claimed method is performed by *a single party*." Slip op. at 6 (emphasis added). The majority found this single-actor rule dispositive because, "[w]ithout an agency relationship or contractual obligation, the MyChart users' actions cannot be attributed to the MyChart providers, Epic's customers." *Id.* at 8.

Judge Bryson concurred but wrote separately to state that, while he thought the majority's decision was controlled by prior decisions of this Court, "[w]hether those decisions are correct is another question, one that is close enough and important enough that it may warrant review by the en banc court in an appropriate case." *Id.* at 1 (Bryson, J., concurring).

Judge Newman dissented. She determined that the single-actor rule conflicts with prior Federal Circuit and Supreme Court precedent. *Id.* at 11-12 (Newman, J.,

dissenting). "The common-law concept of joint tortfeasor has long been established in the patent arena," Judge Newman explained, "and in its application the cases have turned on their particular facts," not on a bright-line rule tied to agency or contractual obligations. *Id.* at 11. Judge Newman lamented that the net result of the majority's decision is that "McKesson's new method, and all such interactive methods, [are] open for infringement without redress," even though "the patent meets every requirement of patentability and every step of the claimed method is practiced." *Id.* at 2, 5.

This Court granted en banc rehearing on May 26, 2011.

SUMMARY OF ARGUMENT

The questions before this Court boil down to whether owners of an entire class of validly issued patents—those that contemplate joint action—should be denied any effective recourse for the violation of their exclusive rights. In this case, healthcare providers and their patients practice the entire patented method; the healthcare providers perform all but one step of the method while encouraging and directing their patients' performance of the other step; and Epic, McKesson's competitor, profits from inducing all of this. If McKesson's right to exclude others from performing its patented method does not preclude this conduct, it effectively precludes nothing, and McKesson is left with a legal paradox—a presumptively valid patent that confers no right to exclude.

I. There is no dispute that direct infringement of a method claim requires performance of all of the steps of the method. And ordinarily, a single actor will be accused of performing all of the steps by itself. But that does not mean that two actors can evade the Patent Act by dividing the steps among them.

As analogous questions have arisen in other areas of law, the common law has, over time, "identif[ied] the circumstances in which it is just to hold one individual accountable for the actions of another." *Sony Corp. Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 435 (1984). And the common law has developed a number of overlapping doctrines that work together to protect wronged parties. Until this Court's decision four years ago in *BMC*, courts applied those doctrines in a number of patent cases to hold culpable actors accountable.

At least three of those traditional joint or vicarious liability doctrines apply here. *First*, a party that knowingly combines its actions with those of another to commit a tort is liable even if each party's acts, "standing alone, would not be wrongful, but together they cause harm to the plaintiff." Prosser & Keeton on Torts § 52, at 354 (5th ed. 1984). *Second*, a party that directs, controls, induces, or fails to exercise a right to control another's action is responsible for that action, in part because "one who accomplishes a particular consequence is as responsible for it when accomplished through directions to another as when accomplished by himself." Restatement (Second) of Torts § 877 cmt. a (1979). *Third*, a party that

"does a tortious act in concert with [an]other or pursuant to a common design with him" shares liability for the tort. *Id.* § 876(a).

Under those principles, at least the healthcare providers are liable for direct infringement. A healthcare provider creates, operates, and controls the entire MyChart environment. In doing so, it performs all method steps but one—the technologically trivial step of initiating a communication. And the healthcare provider directs, induces, and has full knowledge of the patient's performance of that step. The healthcare provider creates each patient's personalized webpage, account, and password, instructs the patient on how to use that account and password to initiate a communication, and performs the remaining steps.

While the nature of the doctor-patient relationship is not *necessary* to that conclusion, it strongly supports it. Whenever people act pursuant to a close, ongoing relationship, at least one of them is bound to have the requisite knowledge of their combined conduct, or to direct or induce the other's conduct. The doctor-patient relationship raises an especially strong inference that patients act pursuant to their doctors' directions. Patients may not be legally obligated to follow those directions, but when they do, the doctors are responsible for the resulting conduct.

In *BMC*, this Court established a direction-or-control test for joint infringement precisely because "a defendant cannot . . . avoid liability for direct infringement by having someone else carry out one or more of the claimed steps on

its behalf." 498 F.3d at 1379. By *Akamai* and this case, however, the direction *or* control test had shrunk to a control test limited to just two specific types of control, agency relationships and contractual obligations. There is no legal or policy basis for limiting joint infringement to those two situations.

To be sure, those are both situations in which one party directs, controls, or induces another, and is therefore responsible for the other's actions. But once this Court recognized that traditional theories of joint or vicarious liability should apply in patent cases to that extent, there was no basis for limiting their application to that extent. All of the traditional theories work together to prevent ready evasions of a party's legal rights, and nothing in the Patent Act suggests that Congress wanted to prevent only some of those evasions while sanctioning others.

II. For those reasons, at least the healthcare providers are responsible for direct infringement. But even if neither of the joint actors were directly liable, Epic would still be liable for inducing their combined performance of the patented method. There is no dispute that a party can be liable for indirect infringement only if there was direct infringement, and that direct infringement of a method requires performance of all of the method steps. But *BMC* erred in holding that a single actor must directly infringe by performing all of the steps itself. Earlier decisions of this and other courts, including *Fromson*, 720 F.2d 1565, held that a

defendant could be held liable for indirect infringement even when no single actor performed all of the method steps.

Unlike *BMC*, those decisions implement the policy underlying the indirect infringement doctrine, which is "to provide for the protection of patent rights where enforcement against direct infringers is impractical," *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 377 U.S. 476, 511 (1964) (quotations and citation omitted), by providing a remedy when "the defendant displayed sufficient culpability to be held liable as an infringer," *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469 (Fed. Cir. 1990). If Epic were correct that no one is liable for direct infringement, enforcement against direct infringers would be not just "impractical," but impossible. And Epic, the mastermind of all of the concerted activity, is clearly culpable because it has intentionally induced and profited from the combined performance of the entire patented method.

III. The text and context of the Patent Act confirm that Congress intended to incorporate traditional liability doctrines, not to take the unusual step of departing from them. The Act grants each patent holder the right to exclude "others" from practicing the invention, and confirms that "whoever" practices the invention, also in the plural, infringes. 35 U.S.C. §§ 154(a)(1), 271(a). Those broad provisions confirm that the right to exclude is not limited to a right to exclude single actors.

Any other conclusion would open an enormous and unjustified loophole in patent protection. As noted above, it would effectively render a whole class of valid patents—those that contemplate action by more than one entity—unenforceable and worthless. It would also jeopardize *all* method patents because even if a method claim were drafted from the perspective of a single actor, parties could still choose to divide the steps, and then claim immunity on the ground that none of them individually practiced the entire method. The patent right is far too important to permit private parties to eviscerate it in this manner.

ARGUMENT

Because the Patent Act does not expressly answer this Court's questions, the Court must look to the "legal background of ordinary tort-related vicarious liability rules," which Congress "intends its legislation to incorporate." *Meyer v. Holley*, 537 U.S. 280, 285 (2003). There is no patent-law exception to that principle; the same ordinary rules that apply in every other area of law generally apply to patent law as well. *See, e.g.*, *MedImmune, Inc. v. Genentech, Inc.*, 549 U.S. 118, 128-29 (2007) (applying traditional subject-matter jurisdiction rules in declaratory judgment action); *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 390 (2006) (applying traditional four-part test for injunctions); *Dickinson v. Zurko*, 527 U.S. 150, 165 (1999) (applying traditional standard of review for agency action).

Over the course of centuries, common-law courts developed a series of distinct but overlapping bases for joint and vicarious liability. *See* Restatement (Second) of Torts §§ 875-879. Together, those various doctrines identify the full set of "circumstances in which," experience has shown, "it is just to hold one individual accountable for the actions of another." *Sony*, 464 U.S. at 435. Because common-law principles reflect our legal system's considered and nuanced determination of when one party should be held responsible for the acts of another, they are entitled to considerable respect.

This Court's recent *BMC* line of decisions erred by departing from longstanding common-law *and* patent-law precedents. As Judge Newman explained, "[t]he common-law concept of joint tortfeasor has long been established in the patent arena." Slip op. at 11 (dissenting opinion). Indeed, less than a year before *BMC*, this Court "discern[ed] no flaw" in a jury instruction that parties were liable if "'the infringement is the result of the participation and combined action(s) of one or more persons or entities . . . .'" *On Demand Mach. Corp. v. Ingram Indus., Inc.*, 442 F.3d 1331, 1345 (Fed. Cir. 2006). This Court should now return to and follow the traditional liability principles discussed below.

I. AT LEAST THE HEALTHCARE PROVIDERS ARE LIABLE FOR DIRECT INFRINGEMENT BASED ON THEIR JOINT PERFORMANCE OF THE PATENTED METHOD WITH THEIR PATIENTS.

This Court asked whether "the nature of the relationship between the relevant actors—e.g., service provider/user; doctor/patient—affect[s] the question of direct or indirect infringement liability." With respect to direct infringement, at least three of the traditional bases for joint or vicarious liability are applicable here. Although the doctor-patient relationship is not *necessary* to liability under any of those doctrines, it strongly confirms that at least the healthcare providers are accountable for the joint performance of McKesson's patented method.

A. An Actor That Knowingly Combines Its Conduct With That Of Another To Produce A Tortious Result Is Liable For That Tort.

1. An actor is liable for performing some method steps and knowingly combining that performance with another's performance of the remaining steps.

The common law has long imposed liability "where the acts of each of two or more parties, standing alone, would not be wrongful, but together they cause harm to the plaintiff." Prosser & Keeton on Torts § 52, at 354 (5th ed. 1984); *see also* Restatement (Second) of Torts § 879. When a party knows that its acts will combine with another's, it is liable for that combination.

For example, if two doctors each administered a drug to a patient, and the combination caused a grave side effect, they could not escape liability on the ground that neither drug, acting alone, would have harmed the plaintiff. Similarly,

two defendants would be jointly liable if each put a different substance in a victim's coffee and the substances combined to form a poison, even though they would have been harmless individually. *See, e.g., Blair v. Deakin*, 57 L.T.R. 522, 525-26 (1887).

Otherwise, the defendants "might all laugh at [the plaintiff] and say, 'You cannot sue any one of us because you cannot prove what each one of us does would of itself have been enough to cause you damage.'" *Id.* at 525. Because that "would be a most unjust law," it is not the law. *Id.* Neither actor would have been liable if its action had not combined with another party's action, but its conduct is "wrongful because it is done in the context of what others are doing." Prosser and Keeton on Torts § 52, at 354.

The common law and patent law have held actors accountable for knowingly combining their actions with another's in a wide variety of circumstances. For example, defendants are liable when their combined acts resulted in pollution or nuisance, but each defendant's acts would not, by themselves, have done so. Thus, although a party's discharge of a substance into a river would not have been wrongful standing alone because it would not have harmed the water quality, it was wrongful when combined with discharges of others. *See, e.g.*, *Hill v. Smith*, 32 Cal. 166, 167-68 (1867); *Woodyear v. Schaefer*, 57 Md. 1, 5 (1881); *see also Woodland v. Portneuf Marsh Valley Irrigation Co.*, 146 P. 1106, 1106 (Idaho

1915). In another leading case, a state supreme court found liability where individual structures built by different parties "caused and could cause no damage" by themselves, but together diverted water in a way that harmed the plaintiff. *Town of Sharon v. Anahma Realty Corp.*, 123 A. 192, 193 (Vt. 1924).

Courts have also held one actor liable even though its conduct would not independently have been tortious toward the plaintiff, and even though the other joint actor was *not* liable. *See* Restatement (Second) of Torts § 883 & cmt. b. A classic application of this rule occurs when one actor, while carefully driving a car, causes harm to someone as a result of an unknown defect caused by the negligence of another party, such as the car's owner. *See Se. Greyhound Lines v. Callahan*, 13 So.2d 660, 663 (Ala. 1943). In that situation, only the owner or other third party is liable, even though its acts alone would not have injured the plaintiff.

In another case, a railroad company caused a gas leak and an individual lit a match, causing grave harm to others. The court recognized that the individual's liability turned on whether he knew of the gas leak, and the railroad was liable even if the individual was not because the railroad should have reasonably foreseen that an innocent individual might light a match or otherwise unintentionally ignite the leaked gas. *See Watson v. Ky. & Ind. Bridge & R.R. Co.*, 126 S.W. 146, 150 (Ky. App. 1910). Some but not all defendants were similarly liable in a securities fraud case where the actor who had approached the plaintiffs, and whose actions

were therefore necessary to the tort, was actually "a victim of the scheme rather than a knowing participant in it," and thus not liable. *Stadia Oil & Uranium Co. v. Wheelis*, 251 F.2d 269, 276 (10th Cir. 1957). In all of these examples, defendants were liable because they knowingly combined their conduct with another's, even though their actions standing alone would not have tortiously injured the plaintiff.

This rule applies to strict-liability offenses such as patent infringement. In one strict-liability case, for example, a state supreme court held a party liable for faulty construction because it "supplied the plans and specifications [and] also actively supervised" the construction, even though the court exonerated the construction company that actually undertook the construction. *See Kennecott Copper Corp. v. McDowell*, 413 P.2d 749, 753 (Ariz. 1966).

Before this Court's recent decision in *BMC*, a number of patent cases followed those very principles. An early patent treatise explained that, "[t]o use in part with intent that others shall complete the operation, . . ., is likewise an infringement." Robinson, 3 The Law of Patents for Useful Inventions, § 904, at 63-64 (1890). Thus, for example, when a vendor performed some steps of a patented method and knew that its customer would perform the remainder, courts held the vendor liable. *See Peerless Equip. Co. v. W.H. Miner, Inc.*, 93 F.2d 98, 105 (7th Cir. 1937) (liable defendant had "knowledge that the [customer] will . . . complet[e] the final step of the process"); *Solva Waterproof Glue Co. v. Perkins*

Glue Co., 251 F. 64, 73 (7th Cir. 1918) (liable defendant acted "with the intention and for the purpose of bringing about its use in such a combination"); *Mobil Oil Corp. v. W.R. Grace & Co.*, 367 F. Supp. 207, 253 (D. Conn. 1973) (liable "[d]efendant knew . . . that its customers would place the catalysts as sold by defendant into" final process steps); *Rumford Chem. Works v. Hecker*, 20 F. Cas. 1342, 1346 (C.C.D.N.J. 1876) (No. 12,133) (liable defendant acted "with the intent and further purpose of enabling the buyer to" complete patented process).

Conversely, courts have held a customer liable for patent infringement when it outsourced a single step or purchased "made to order" parts, while performing the other steps itself. *See Metal Film Co. v. Metlon Corp.*, 316 F. Supp. 96, 100 n.12 (S.D.N.Y. 1970) ("defendants choose to have the vacuum metalizing . . . done by outside suppliers"); *Marley Mouldings Ltd. v. Mikron Indus., Inc.*, No. 02 C 2855, 2003 WL 1989640, *3 (N.D. Ill. Apr. 30, 2003) (customer purchased "made to order" parts while performing all other steps itself). In those cases, the customers knew of the combination and bore legal responsibility.

By emphasizing the defendant's knowledge of the combination, those patent cases make clear that liability is based on *knowingly* combining one's actions with those of another. Because patent infringement is a strict liability tort, it is irrelevant whether a defendant knew of the *patent* at issue (just as ignorance of the law is no defense to a tort). *See, e.g., Global-Tech Appliances, Inc. v. SEB S.A.*,

131 S. Ct. 2060, 2065 n.2 (2011). But the defendant must have known or at least have reasonably foreseen the other's *acts*. If the defendant did not know that its actions would combine with another's, it would not be responsible for that combination.

Indeed, when common-law courts held an actor liable for the combination of its acts with another's, the courts typically emphasized the defendant's knowledge of the combination, or it was obvious that the defendant knew of the combination. *See, e.g.*, *Town of Sharon*, 123 A. at 192 (imposing joint liability for "passive concert or passive community" that showed knowledge); *Barnes v. Masterson*, 56 N.Y.S. 939, 941 (App. Div. 1899) (two people deposited sand against the same neighbor's retaining wall and caused it to collapse, even though neither alone deposited enough sand to do harm); *Blair*, 57 L.T.R. at 527 ("every manufacturer is aware of what is going to happen" through their separate discharges of materials into a river). Similarly, a state supreme court declined to impose joint liability in another case precisely because neither actor had "acquiesced in the joint use" of drainage ditches that caused damage to the plaintiff. *Sloggy v. Dilworth*, 36 N.W. 451, 453 (Minn. 1888).

2. The healthcare providers' close, ongoing relationship with their patients confirms their liability for knowingly combining their acts with their patients' acts.

Under those common-law and patent cases, no specific relationship between the actors is necessary. Instead, the examples discussed above make clear that even otherwise independent actors are liable to the extent that they knowingly combine their actions to produce a tortious injury. *See also* Restatement (Second) of Torts § 879 (entitled "Concurring or Consecutive *Independent Acts*" (emphasis added)). The actors' relationship can be important in practice, however. When two parties combine their actions as part of a close, ongoing relationship, at least one of them will surely have the requisite knowledge. If the law will impose liability on an otherwise independent party because it knowingly acted in the context of another's actions, a party that knowingly acts in furtherance of its close, ongoing relationship with the other is even more clearly liable.

Here, for example, at least the healthcare providers are responsible for the joint infringement. A healthcare provider creates, operates, and controls the entire MyChart environment. *See* pp. 8-9, *supra.* In doing so, it performs all method steps but one—the technologically trivial step of initiating a communication. *Id.* at 10. And the healthcare provider knows and intends that patients will perform that step because it creates each patient's personalized webpage and account and instructs the patient on how to use that account to initiate a communication. *Id.* at

8-9. Indeed, there is no other reason that healthcare providers would engage in any of the relevant conduct: They could not benefit from offering personalized electronic communication unless patients actually used it, as a substitute for telephone calls or office visits.

This is no different from the situation, discussed above, where a company performs all but one step and knowingly leaves the remaining step to its customer to finish. *See* pp. 22-23, *supra*. If anything, this should be an even more clear-cut case for liability because healthcare providers do not cease their involvement after performing some steps; instead, they maintain the entire MyChart network at all times, and perform the remaining steps *after* a patient performs its step by initiating a communication. Whether or not the patients have the requisite knowledge, therefore, the healthcare providers clearly do. At a bare minimum, McKesson has raised a genuine dispute of fact on that question, such that the district court erred in granting summary judgment of non-infringement.

B. Where One Party Directs, Controls, Induces, Or Has A Right To Control Another's Performance Of A Method Step, The Other's Performance Of That Step Is Attributed To That Party.

Under a similar common-law doctrine, one party's conduct is attributed to another if the other directed, controlled, induced, or failed to exercise a right to control that conduct. *See* Restatement (Second) of Torts § 877. As the Restatement explains, "one who accomplishes a particular consequence is as

responsible for it when accomplished through directions to another as when accomplished by himself." *Id.* cmt. a. Thus, it is irrelevant whether one personally performs a step, or directs another to do so, because both actions reflect equal culpability.[1]

The *BMC* line of cases appeared to acknowledge this doctrine by adopting a "control or direction" test. *See BMC*, 498 F.3d at 1380; *Muniauction*, 532 F.3d at 1329. But panels of this Court erred in effectively converting the "control *or direction*" test into a "control" one and limiting liability to only two forms of control: an agency relationship or contractual obligation. Slip op. at 7-8; *Akamai*, 629 F.3d at 1320. Those are unquestionably two circumstances in which one party directs, controls, or induces another, and is therefore responsible for the other's actions. But there is no basis for limiting liability to those two specific ways of exercising control. While the Restatement makes clear that an agent's actions are imputed to the principal, it also emphasizes that imputation is "independent of" and not limited to the master-servant relationship. Restatement (Second) of Torts § 877 cmt. a. Nor is there anything magical about having another perform a step

[1] The Restatement, which addresses tort law generally, uses the word "induce" in its ordinary sense of "[t]o lead on; to influence; to prevail on; to move by persuasion or influence." Webster's New Int'l Dictionary 1269 (2d ed. 1945) (quoted in *Global-Tech*, 131 S. Ct. at 2065). For this purpose, inducement does not take its more technical patent-law meaning, which generally includes knowledge of the patent, a consideration that is irrelevant to liability for direct infringement. *See generally Global-Tech*, 131 S. Ct. at 2065 n.2.

pursuant to a contractual obligation, as opposed to directing, controlling, or inducing the conduct in some other way. Attribution is based on the defendant's direction, control, or inducement, not on whether the defendant does so as part of any particular type of relationship, such as an agency or contractual relationship.

1. The healthcare providers are responsible for inducing their patients' performance of the only step the providers do not perform themselves.

Two bases for attribution are particularly relevant here. First, a party is responsible for conduct that it "orders or induces." *Id.* § 877(a). That is an especially strong basis for joint liability in the patent context because a party that performed all of the method steps itself, or that induced another to perform all of the steps, would unquestionably be liable. There is no reason to permit a party to immunize itself from liability by mixing those bases for liability through performing some steps itself while inducing all others. If anything, a party's performance of some steps makes it more, not less, culpable than someone who induces another to perform all of the steps. Simply put, a party's *direct participation* in infringement should not *immunize* it from liability.

Under this line of authority, the healthcare providers are clearly responsible for their patients' initiation of communications—the only step the healthcare providers do not perform themselves. Patients do not initiate communications through a personalized account by happenstance. Instead, they do so because the

healthcare provider *invites* (*i.e.*, induces) them to do so. *See* A5418. A patient could not even log onto the system without using a personalized account and password supplied by the healthcare provider. The healthcare provider creates and controls the entire MyChart environment, instructs the patients on how to use their accounts, responds to the patients' inquiries, and performs all but the one, simple step it induces patients to perform. *See* pp. 8-10, *supra*.

There is no question that a healthcare provider would be liable for direct infringement if a patient dictated an inquiry to an employee of the healthcare provider and that employee typed the inquiry into MyChart on the patient's behalf. At that point, the healthcare provider would clearly exercise control over the performance of the entire patented method. But that distinction—between controlling a system into which a patient types an inquiry, and typing it at the patient's request—should hardly matter. In both scenarios, a healthcare provider directs and controls the entire process.

The healthcare provider does so, moreover, as part of the close, ongoing doctor-patient relationship, a relationship that raises a strong inference that patients act under their doctors' direction or inducement. The law has long treated the doctor-patient relationship as a "special relationship," *Bennett v. MIS Corp.*, 607 F.3d 1076, 1099 (6th Cir. 2010); *Cooper v. MRM Inv. Co.*, 367 F.3d 493, 500 (6th Cir. 2004), with "special consequence." *Caplin & Drysdale, Chartered v. United*

States, 491 U.S. 617, 623 n.3 (1989). That relationship "traditionally has exacted obligations beyond those associated with armslength transactions," *Canterbury v. Spence*, 464 F.2d 772, 782 (D.C. Cir. 1972); *accord Swayze v. McNeil Labs., Inc.*, 807 F.2d 464, 471 (5th Cir. 1987), as the doctor-patient privilege confirms, *see Conant v. Walters*, 309 F.3d 629, 636 (9th Cir. 2002).

Indeed, tort law presumes for some purposes that patients follow their doctors' directions because the doctors act as learned intermediaries. *See, e.g., Brooks v. Medtronic, Inc.*, 750 F.2d 1227, 1231-32 (4th Cir. 1984). Thus, "[a] number of courts have conflated the actions of patients and doctors in determining whether the combined actions . . . infringe upon a patent." *Eli Lilly & Co. v. Actavis Elizabeth LLC*, 676 F. Supp. 2d 352, 377 n.21 (D.N.J. 2009).

To be clear, the point is not that the doctor-patient relationship is necessarily dispositive, in and of itself. Instead, the point is that the close, ongoing relationship should resolve any doubt that doctors do indeed direct or induce their patients' relevant activities. Patients are not, of course, legally obligated to follow that direction or to accept that inducement. But when they do, their actions are reasonably attributed to the doctors, who are then liable for direct infringement. At a bare minimum, McKesson has raised a genuine dispute of fact on that question, such that summary judgment was unwarranted.

2. The healthcare providers are responsible for their patients' conduct on the providers' electronic premises.

Premises liability provides another basis for attribution of patients' conduct to their healthcare providers. A party is responsible for permitting another "to act upon his premises or with his instrumentalities, knowing or having reason to know that the other is acting or will act tortiously." Restatement (Second) of Torts § 877(c). Copyright law has long applied this principle to hold, for example, that dance-hall owners may be liable for copyright infringement by musicians, *see, e.g.*, *Dreamland Ball Room, Inc. v. Shapiro, Bernstein & Co.*, 36 F.2d 354, 355 (7th Cir. 1929), just as landlords are responsible for conduct at swap meets, *see Fonovisa, Inc. v. Cherry Auction, Inc.*, 76 F.3d 259, 262-64 (9th Cir. 1996). Under the copyright cases, liability stems from a defendant's decision to profit from infringement "while declining to exercise a right to stop or limit it." *Metro-Goldwyn-Mayer Studios Inc. v. Grokster, Ltd.*, 545 U.S. 913, 930 (2005); *see also Shapiro, Bernstein & Co. v. H.L. Green Co.*, 316 F.2d 304, 308 (2d Cir. 1963) (quoted in *Sony*, 464 U.S. at 437-38 n.18).

Although common-law courts applied this doctrine to physical premises, modern case law has logically expanded it to virtual premises such as electronic networks. *See A&M Records, Inc. v. Napster, Inc.*, 239 F.3d 1004, 1022-24 (9th Cir. 2001). For example, the Ninth Circuit held Napster liable because of its "failure to police [its] system's 'premises.'" *Id.* at 1024.

That doctrine is fully applicable here. Like patent infringement, copyright infringement is a strict-liability, intellectual-property tort. Especially in light of "the historic kinship between patent law and copyright law," patent and copyright cases provide not just a good analogy, but "[t]he closest analogy" for one another. *Sony*, 464 U.S. at 439; *see also Grokster*, 545 U.S. at 932. Moreover, the dance-hall cases are an outgrowth of principal-agent liability, *see Fonovisa*, 76 F.3d at 261-62, which this Court recognized in *BMC* to be an appropriate basis for joint infringement liability, 498 F.3d at 1379. Having already accepted agency principles as a basis for joint liability, there is especially little reason to reject a settled outgrowth of those principles.

Significantly, premises owners are liable because they have control over their premises in the sense that they have authority to police and restrict conduct on them. *See Fonovisa*, 76 F.3d at 262-63. The healthcare providers here are responsible for the same reason—they establish the electronic network and therefore have the right and ability to restrict the patients' access to the network and the actions that patients may perform on it. *See, e.g.*, A5415-16.

Indeed, a doctor's office has *greater* culpability here than the owner of a dance hall that merely fails to exercise a right to control infringing performances. In the dance hall context, the activities of a musician may well *not* infringe because many works are not copyrighted. But here, a patient's initiation of a

communication over the MyChart system, combined with the automated activities that automatically ensue, *necessarily* infringe. Thus, the better analogy is a dance hall that provides not just space for a band in general, but a specific karaoke machine programmed to play only infringing recordings, with the hall owner providing directions on how to play those recordings.

It would make little sense to hold that a doctor's office would infringe if it "merely" provided the electronic premises for infringement and permitted another to perform all of the infringing acts, but could evade liability by performing one or more of the method steps itself while structuring the premises to necessarily perform the remaining steps when used by a customer. Again, a party's decision to *participate* in and *structure* the performance of a method should not *immunize* it from liability. Otherwise, parties could easily structure their affairs to practice patented inventions with impunity.

C. Parties That Act In Concert To Commit A Tort, Or Pursuant To A Common Design, Are Liable Jointly.

Under the third traditional doctrine at issue here, a party that "does a tortious act in concert with [an]other or pursuant to a common design with him" is liable for the concerted conduct. Restatement (Second) of Torts § 876(a). "Parties are acting in concert when they act in accordance with an agreement to cooperate in a particular line of conduct or to accomplish a particular result." *Id.* § 876 cmt. a.

Significantly, the agreement may be express or implied and may be "understood to exist from the conduct itself." *Id.*

In addition to inferring an agreement from the parties' conduct, courts have also used the parties' relationship as a proxy for finding such an agreement. *See, e.g.*, *Sprinkle v. Lemley*, 414 P.2d 797, 800-01 (Or. 1966) (multiple doctors treating same patient); *Simpson v. Burrows*, 90 F. Supp. 2d 1108, 1127 (D. Or. 2000) (husband and wife). That is true whether or not the actors have an agency or contractual relationship. Indeed, much of the point of the joint tortfeasor doctrine is to cover situations where people voluntarily act together to produce a tortious result.

In patent law, therefore, courts have held parties liable for joint infringement when acting together to practice a patented method. *See, e.g.*, *Shields v. Halliburton Co.*, 493 F. Supp. 1376, 1388 (W.D. La. 1980); *Cordis Corp. v. Medtronic AVE, Inc.*, 194 F. Supp. 2d 323, 349-50 (D. Del. 2002), *rev'd on other grounds*, 339 F.3d 1352 (Fed. Cir. 2003) (citing "very close relationship" between defendant vendor and customer physicians). One leading treatise, in listing a range of joint infringement doctrines, cited concerted action as a basis for joint liability more than a century ago. *See* Walker, Text-Book of the Patent Laws of the United States of America § 406, at 343 (4th ed. 1904) ("Where several persons co-operate in any infringement, all those persons are liable therefor as contributors thereto.");

see also id. §§ 403-07. And district courts commonly enjoin not only the defendant but also anyone "acting in concert or participation" with the defendant, confirming that acting in concert to practice an invention is unlawful. *See, e.g.*, *Engineered Sports Prods. v. Brunswick Corp.*, 362 F. Supp. 722, 729 (D. Utah 1973); *see also* Fed. R. Civ. P. 65(d).[2]

Here, the parties' conduct, and the doctor-patient relationship, show that they were acting in concert. A patient could not perform the claim step of initiating a relevant communication unless the healthcare provider had first established a personalized account for the patient and instructed the patient on how to use that account. *See, e.g.*, A1255; A5415. And a patient would have no reason to perform that step unless it understood that the healthcare provider would respond. Thus, the doctor and patient have at least an implicit agreement "to cooperate in a particular line of conduct or to accomplish a particular result." Restatement (Second) of Torts § 876 cmt. a. They also have an express, written agreement to a set of terms and conditions concerning the patient's use of

[2] A comment to the Restatement explains that, because liability on this theory is limited to circumstances in which "the conduct of the actor [is] in itself tortious," a person "who innocently, rightfully and carefully does an act that has the effect of furthering the tortious conduct or cooperating in the tortious design of another" is not liable. Restatement (Second) of Torts § 876 cmt. c. In other words, innocent conduct that has only the effect of contributing to another's tortious design does not give rise to acting-in-concert liability, but those who truly act in concert are liable for that reason.

MyChart. *See* A18; A5416. At a minimum, McKesson has raised a genuine dispute of fact on this question.

It bears emphasis that truly innocent actors are not liable under any of the traditional joint or vicarious liability theories discussed above. Instead, those theories require knowingly combining one's acts with another's; directing, controlling, or inducing another; or agreeing to cooperate in a particular line of conduct or to accomplish a particular result. In this case, the healthcare providers are clearly culpable under the first two of those theories, as explained above.

Although it presents a closer question, the healthcare providers and patients should also be considered direct infringers because they act in concert, as explained above. That result is not unfair to individual patients for at least two reasons. *First*, a typical user of an infringing system, such as a user of a Microsoft Outlook feature that infringes a system claim, is strictly liable even though it would not realistically have known that the system satisfied all of the elements of a patent claim. *See Centillion Data Sys., LLC v. Qwest Commcn's Int'l, Inc.*, 631 F.3d 1279, 1285 (Fed. Cir. 2011). The patients' agreement and conduct here make them at least as culpable as such a user. *Second*, experience has shown what common sense suggests—that no one would actually sue an individual patient or user for minimal damages associated with that single patient or user. Instead, they

would sue an inducer or other responsible party for damages and injunctive relief concerning the full scope of the infringement, as McKesson has done here.

D. This Court's Recent Panel Decisions Erred By Selectively Applying Only One Subset Of Only One Of The Traditional Joint Or Vicarious Liability Rules.

The panel majority considered itself bound by this Court's recent *BMC* line of decisions, which culminated in the holding in this case and *Akamai* that "'there can only be joint infringement when there is an agency relationship between the parties who perform the method steps or when one party is contractually obligated to the other to perform the steps.'" Slip op. 7 (quoting *Akamai*, 629 F.3d at 1320). That holding is wrong for the reasons explained above. It also bears emphasis that the decisions in this case and *Akamai* were not necessary consequences of *BMC*, as shown by the district court's decision to deny Epic's motion for summary judgment after *BMC* but grant it after subsequent decisions of this Court.

In *BMC*, this Court determined that "a defendant cannot . . . avoid liability for direct infringement by having someone else carry out one or more of the claimed steps on its behalf" because "the law imposes vicarious liability on a party for the acts of another in circumstances showing that the liable party controlled the conduct of the acting party." 498 F.3d at 1379. That statement was accurate as far as it went. And discussion of the broader range of traditional doctrines may have been unnecessary in *BMC* because they may have been inapplicable on the extreme

facts of that case, where several different participants, many of whom may not have known of the others, performed method steps. *See id.* at 1375-76, 1378. Indeed, *BMC* emphasized that a "mastermind" should be held liable. *Id.* at 1381. But subsequent panels read *BMC* as categorically precluding joint or vicarious liability on any basis other than an agency relationship or contractual obligation.

As a result, this Court to some extent backed into the holding of this case and *Akamai* without expressly considering this question: What in the Patent Act justifies applying that narrow subset, but only that narrow subset, of the traditional joint or vicarious liability rules? The answer is that nothing does. As explained above, the common law and patent law have long recognized a broad range of joint and vicarious liability doctrines that together "identify[] the circumstances in which it is just to hold one individual accountable for the actions of another." *Sony*, 464 U.S. at 435. Applying only some of those doctrines ensures that parties will not be held accountable in the other "circumstances in which it is just to hold one individual accountable for the actions of another." *Id.* The resulting doctrinal gaps open up the very "loophole" in patent protection that the *BMC* Court said it was avoiding through adoption of vicarious liability principles. *BMC*, 498 F.3d at 1379.

Thus, once one concludes that traditional rules should apply in at least some circumstances (such as agency relationships and contractual obligations), it follows

that all of the rules should apply, in full, for exactly the same reasons. Indeed, *Akamai*'s rigid, bright-line rule in an area of law typically characterized by equity and fairness is precisely the kind of rule that this en banc Court and the Supreme Court have rejected in recent years. *See, e.g.*, *Bilski v. Kappos*, 130 S. Ct. 3218 (2010); *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398 (2007); *eBay*, 547 U.S. 388; *TiVo Inc. v. Echostar Corp.*, __ F.3d __, No. 09-1374, 2011 WL 1486162, *6-8 (Fed. Cir. Apr. 20, 2011) (en banc). This Court should do so again.

II. A PARTY IS LIABLE FOR INDIRECT INFRINGEMENT IF IT INDUCED OR CONTRIBUTED TO THE PERFORMANCE OF EVERY STEP OF A PATENTED METHOD, EVEN IF DIFFERENT ACTORS PERFORMED DIFFERENT STEPS.

For the reasons explained above, at least the healthcare providers are liable for direct infringement. Epic is then liable for inducing that direct infringement.

Even if this Court were to hold that no one actor could be held liable for direct infringement, however, Epic would still be liable for inducement. Epic masterminded the entire operation by inducing the joint performance of the patented method. There is no reason in the world to let Epic—a single actor—get away with intentionally inducing the others' performance of the entire method.

The panel majority relied on a statement in *BMC* to the effect that "[i]ndirect infringement requires, as a predicate, a finding that *some party* amongst the accused actors has *committed the entire act* of direct infringement." Slip op. 9 (quoting *BMC*, 498 F.3d at 1379) (emphases added). That single-actor

requirement is wrong. It is unsupported and flatly refuted by decisions of this and other courts. And it is contrary to the basic purposes underlying the indirect infringement doctrine.

A. Indirect Infringement Requires Only A Predicate Act Of Direct Infringement, Not A Predicate Finding That A Single Actor Is Directly Liable.

There is no dispute that a party can be liable for indirect infringement only if there was direct infringement. *See, e.g.*, *Dynacore Holdings Corp. v. U.S. Philips Corp.*, 363 F.3d 1263, 1272 (Fed. Cir. 2004). *BMC* erred, however, in concluding that a single actor must perform all of the steps for this purpose. This Court and the Supreme Court have always required, as a predicate for indirect infringement, performance of all of the steps of a patented method, a rule known as the all-elements rule. *See, e.g.*, *TIP Sys., LLC v. Phillips & Brooks/Gladwin, Inc.*, 529 F.3d 1364, 1379 (Fed. Cir. 2008). But until *BMC*, neither court had ever held that a single actor must perform all of the elements. Instead, the courts looked to the *fact* of infringement by focusing on *acts*—whether each and every method step was performed—not to the separate issue of *who* or *how many people* performed the method, or whether the direct actors were also *liable* for combining their conduct.

In *Fromson*, for example, this Court held that a company "could be liable for contributory infringement" (a type of indirect infringement) if it performed some

steps of a patented method and left the remaining steps for its customers to perform. *Fromson*, 720 F.2d at 1568. That holding clearly rejects a single-actor rule for purposes of indirect infringement because no single actor performed all of the method steps. Instead, the *Fromson* court necessarily concluded either that the second actor could be liable for direct infringement even though it did not perform all of the steps, or that there could be indirect infringement without any liable direct infringer. Either way, *Fromson* reflects the commonsense principle that, if every step of a claim has been performed, the claim is infringed, and a party that induces or contributes to that direct infringement is liable for indirect infringement. As explained above, a number of other courts likewise imposed liability for contributory infringement in this circumstance. *See* pp. 22-23, *supra*.

The cases cited by *BMC* are not to the contrary. They stand only for the obvious proposition that, if *no one* completes a patented method, there is no direct infringement and thus no liability for inducing what amounts to non-performance of the method. *See, e.g., Dynacore*, 363 F.3d at 1272, 1277. Those cases do not further require complete performance by a *single* actor, or *liability* of any one person for direct infringement. *See* slip op. at 10 (Newman, J., dissenting) ("[N]one of these cases turned on whether different entities . . . perform different steps of a method claim.").

For example, *Warner-Jenkinson Co. v. Hilton Davis Chemical Co.*, 520 U.S. 17, 40 (1997), characterized "the essential inquiry" for infringement as being whether "the accused product or process contain[s] elements identical or equivalent to each claimed element of the patented invention." In *Joy Technologies, Inc. v. Flakt, Inc.*, 6 F.3d 770 (Fed. Cir. 1993), this Court likewise explained that "a method or process claim is directly infringed . . . *when the process is performed*," *id.* at 773 (emphasis added).

The panel's holding is contrary not only to precedent, but also to the basic purposes of the indirect infringement doctrine. The courts developed that doctrine as "an expression both of law and morals," *Dawson Chem. Co. v. Rohm & Haas Co.*, 448 U.S. 176, 221 (1980) (quoting *Mercoid Corp. v. Mid-Continent Inv. Co.*, 320 U.S. 661, 677 (1944) (Frankfurter, J., dissenting)), in order "to provide for the protection of patent rights where enforcement against direct infringers is impractical," *Aro*, 377 U.S. at 511. Indirect infringement therefore provides a remedy when "the defendant displayed sufficient culpability to be held liable as an infringer," *Hewlett-Packard*, 909 F.2d at 1469, such as when "the technicalities of patent law" would otherwise enable one "to profit from another's invention without risking a charge of direct infringement." *Dawson*, 448 U.S. at 188.

That would be exactly the situation here if this Court agreed with Epic that no one is liable for direct infringement. In that circumstance, Epic's intentional

inducement of the joint performance of the patented method would have created a situation in which "enforcement against direct infringers is" not just "impractical," it is impossible. *Aro*, 377 U.S. at 511. And Epic, as the mastermind of all of the concerted activity, certainly has "sufficient culpability to be held liable as an infringer." *Hewlett-Packard*, 909 F.2d at 1469. The equitable reasons underlying the indirect infringement doctrine therefore apply with particular force to Epic's effort to profit from the performance of McKesson's patented method.

Nor are there any traps for the unwary here. The inducement standard is a strict one. Among other things, the defendant must have known that it was inducing infringement, or at least have been willfully blind to that fact. *See Global-Tech*, 131 S. Ct. at 2068. When a defendant knows that it is inducing the performance of an entire patented method, and the other requirements for inducement are also satisfied, the defendant is unquestionably culpable, whether it induces performance by a single or multiple actors.

B. A Participant In The Joint Performance Of A Method Could Be Liable For Inducing Or Contributing To Another's Performance Of The Remaining Steps.

This Court's question concerning indirect infringement also asked, in part, "[i]f separate entities each perform separate steps of a method claim, under what circumstances, if any, would either entity . . . be liable for inducing infringement or for contributory infringement? *See Fromson v. Advance Offset Plate, Inc.*, 720

F.2d 1565 (Fed. Cir. 1983)." Normally, one does not think of a participant in the underlying conduct as being liable for inducement or contributory infringement. Instead, in modern parlance, and as discussed above, performing some steps while inducing, directing, or controlling another's performance of the other steps is a species of direct infringement, with one actor's conduct being attributable to the other. Under that approach, the healthcare providers and patients directly infringe, while Epic indirectly infringes by inducing the direct infringement.

As *Fromson* and other cases reflect, however, the courts have also viewed analogous fact patterns as giving rise to contributory infringement. In *Fromson*, for example, this Court held that a party that performed most but not all of the method steps was not liable for direct infringement, but could be liable for contributory infringement because it sold a product embodying its performance of most method steps to a customer that then completed the method. *See* pp. 40-41, *supra*. Under those decisions, performing some steps and inducing or contributing to the performance of the remainder gives rise to liability for indirect infringement. In modern terminology, one might view that fact pattern as involving direct infringement, indirect infringement, or both. Regardless of the label, the one thing those cases clearly stand for is that entities like Epic and its licensed healthcare providers cannot evade liability on the ground that more than one actor participated in the infringement.

III. THE *BMC* LINE OF CASES IS CONTRARY TO THE TEXT, STRUCTURE, AND POLICY OF THE PATENT ACT.

To the extent that the *BMC* line of decisions conflicts with the traditional principles discussed above, it is contrary to the text, structure, and policy of the Patent Act, and should therefore be interred. As Judge Newman explained, "[n]o patent principle or public policy, and no statutory requirement, warrants departure from . . . common law principles." Slip op. at 16 (dissenting opinion).

A. The Patent Act Expressly Contemplates Joint Infringement.

Although *BMC* relied on the text of the Patent Act, *see BMC*, 498 F.3d at 1378, the statutory text strongly supports applying the full range of joint and vicarious liability doctrines. Congress specified that every patent must broadly grant "the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States . . . ." 35 U.S.C. § 154(a)(1) (emphasis added). Because that right expressly applies against "others" in the plural, it is not limited to a right to exclude only individual actors from practicing the invention.

Congress confirmed that conclusion by going on to impose liability on "whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States." 35 U.S.C. § 271(a). The ordinary and natural meaning of "whoever" includes "whatever person *or persons*," again in the plural. American Heritage College Dictionary 1540 (3d ed. 1997) (emphasis added). That ordinary meaning is fully consistent with Congress's statutory definition of

"whoever" to include plural actors: "'whoever' include[s] corporations, companies, associations, firms, partnerships, societies, and joint stock companies, as well as individuals." 1 U.S.C. § 1.

The Act further provides that "[w]hoever invents . . . may obtain a patent." 35 U.S.C. § 101. There is no doubt that this use of "whoever" contemplates joint inventorship through concerted activity of more than one person. *See Shum v. Intel Corp.*, 633 F.3d 1067, 1083 (Fed. Cir. 2010) (discussing rules for joint inventorship). Under fundamental canons of statutory construction, a term should have the same meaning throughout a statute. *See FCC v. AT&T Inc.*, 131 S. Ct. 1177, 1185 (2011).

At a bare minimum, nothing in the text of the Patent Act "warrants departure from the[] common law principles" discussed above. Slip op. at 16 (Newman, J., dissenting). Congress generally "intends its legislation to incorporate" the "legal background of ordinary tort-related vicarious liability rules," *Meyer*, 537 U.S. at 285-86, and nothing about patent law inherently warrants a departure from generally applicable rules, *see* p. 17, *supra*. Courts had also followed the traditional rules in pre-1952 patent cases, as explained above, and it is well settled that the 1952 Act preserved that body of case law. *See Ricoh Co. v. Quanta Computer Inc.*, 550 F.3d 1325, 1336 (Fed. Cir. 2008). Especially against that backdrop, Congress's decision to expressly cover multiple actors in both the grant

of the right to exclude and the statutory definition of infringement manifests a clear intent to incorporate, not to reject, traditional joint and vicarious liability rules.

The legislative history further supports that conclusion. The committee report explains that a patent confers "certain exclusive rights and infringement would be *any* violation of those rights." H.R. Rep. No. 82-1928, at 9 (1952) (emphasis added). Because joint performance of a patented method clearly intrudes on the right to exclude, it constitutes infringement under the committee report. From the perspective of the patentee's right to exclude, it makes no difference whether one or more parties combine to perform the invention; either way, the performance inflicts the same injury by depriving the patentee of its exclusive right. An exclusive right to use a baseball, for example, is not reasonably construed as an exclusive right to throw the ball to oneself. Instead, it naturally confers exclusivity over all uses by "others," 35 U.S.C. § 154(a)(1), including interactive uses.

B. The Overall Statutory Scheme Strongly Supports The Application Of Traditional Joint And Vicarious Liability Principles.

BMC suggested that a holding that direct infringement remedies "reach independent conduct of multiple actors would subvert the statutory scheme for indirect infringement." 498 F.3d at 1381. The traditional liability rules discussed above require more than mere "independent" conduct, however: They also require knowing combinations; direction, control, or inducement of another; or an express

or implied agreement. Far from subverting the statutory scheme, those traditional doctrines are essential to maintain the integrity of the patent system by precluding ready evasions. As Judge Newman explained, "[p]recedent elaborating on direct and indirect infringement ha[s] evolved to accommodate, not to limit, the patentee's right to exclude." Slip op. at 7 (dissenting opinion).

The whole point of the judge-made doctrine of indirect infringement is "to provide for the protection of patent rights where enforcement against direct infringers is impractical," *Aro*, 377 U.S. at 511, as "an expression both of law and morals," *Dawson Chem. Co.*, 448 U.S. at 221 (quoting *Mercoid*, 320 U.S. at 677 (Frankfurter, J., dissenting)). Applying the full range of traditional liability doctrines is necessary to effectuate that intent by closing loopholes and preventing injustice. In a typical case, a single actor will normally be accused of directly infringing by performing all of the steps of a method, and another actor may be accused of inducing or contributing to the other's direct infringement. But when multiple actors combine to perform an entire method, another set of rules is needed to address that distinct situation. Otherwise, method patents would be subject to ready evasion, as a party could simply enlist another to perform a minor step. And traditional doctrines of joint and vicarious liability exist for the very purpose of filling that gap.

Moreover, the provisions of the 1952 Patent Act concerning indirect infringement, 35 U.S.C. §§ 271(b), (c), "*expand[ed] significantly* the ability of patentees to protect their rights," *Dawson*, 448 U.S. at 203 (emphasis added). Having expanded patentees' rights, they can hardly be construed to have curtailed traditional rights. *See PharmaStem Therapeutics, Inc. v. ViaCell, Inc.*, 491 F.3d 1342, 1358 (Fed. Cir. 2007); *see also Ricoh*, 550 F.3d at 1336.

BMC itself recognized the need to supplement the basic contributory and induced infringement provisions with a common-law theory when it held that courts could attribute an agent's performance of a method step to its principal. *BMC*, 498 F.3d at 1379-80. Having crossed that bridge, and rightly so, there is no legal or policy justification for declining to recognize the other traditional doctrines of joint or vicarious liability. And doing so would have two untenable consequences.

First, it would effectively render a whole class of valid patents—those that contemplate action by more than one entity—unenforceable. *See* slip op. at 17 (Newman, J., dissenting). There are probably thousands of such patents, including but not limited to a growing number of patents "directed to information-age electronic methods." *See id.* at 7 (Newman, J., dissenting); *see also* Stacie L. Greskowiak, *Joint Infringement After* BMC*: The Demise of Process Patents*, 41 Loy. U. Chi. L.J. 351, 401-02 & n.392 (2010); Sriranga Veeraraghavan, *Joint*

Infringement of Patent Claims: Advice for Patentees, 23 Santa Clara Computer & High Tech. L.J. 211, 212 n.5 (2006).

While *BMC* cast some unwarranted aspersions on such patents, there is no validity or other rule that prohibits or even discourages patents drafted from the perspective of multiple actors. In many instances, it is better to draft interactive claims to specify clearly which actor will perform which steps, instead of trying to draft it artificially from the perspective of a single actor. Doing so promotes clarity, consistent with the PTO's request for clear and precise claim drafting. *See, e.g.*, MPEP 2173.01. It also provides full notice to the public of exactly what combination of conduct is claimed, in keeping with the statutory requirement that claim scope be definite. *See* 35 U.S.C. § 112.

In any event, any judicial preference for claims drafted from the perspective of a single actor would provide no legal basis for refusing to enforce a valid, issued patent in all but the most unlikely of circumstances (agency or contractual obligation). As Judge Newman observed, "[a] patent that cannot be enforced on any theory of infringement, is not a statutory patent right" in any meaningful sense. Slip op. at 17 (Newman, J., dissenting). Such a patent confers no actual right to exclude, which is the *only* substantive right conferred by the patent grant. *See* 35 U.S.C. 154(a)(1). Under the fundamental patent bargain, an inventor is entitled to exclusive rights in return for invention and disclosure. *See Bonito Boats, Inc. v.*

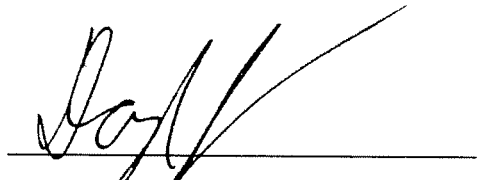
Thunder Craft Boats, Inc., 489 U.S. 141, 150-51 (1989). When the patentee upholds its end of that bargain, and the PTO issues a valid patent, the patent ought not be an unenforceable mirage. As the district court noted, such a conclusion would be at war with "the policy of providing protection to those who devote the time and resources to develop otherwise novel and patentable methods." A20.

The second, and equally serious consequence of Epic's position, is that even if a method claim were drafted from the perspective of a single actor, parties could still choose to divide the steps among them, and then claim immunity on the ground that none of them individually practiced the entire method. In this Court's recent decision in *Golden Hour*, for example, two defendants "formed a strategic partnership" to enable their software programs to combine together to practice a patented method, and collaborated in selling the combined software as a single unit. *Golden Hour Data Sys., Inc. v. emsCharts, Inc.*, 614 F.3d 1367, 1371 (Fed. Cir. 2010). Under the *BMC* line of decisions, a divided panel of this Court held that neither actor was liable because neither practiced the entire method, even though they coordinated strategically to practice it collectively. *Id.* If two entities may profit in that fashion, the loophole is enormous, and the *BMC* line of cases clearly needs revision.

CONCLUSION

The district court granted summary judgment of non-infringement based solely on this Court's *BMC* line of decisions (and with a strong suggestion that this Court reconsider those decisions). This Court should now return to traditional principles of joint and vicarious liability, reverse the judgment of the district court, and remand for further proceedings.

Respectfully submitted on this 20th day of June 2011.



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ADDENDUM

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United States Court of Appeals for the Federal Circuit

MCKESSON TECHNOLOGIES INC. (formerly McKesson Information Solutions, LLC),
Plaintiff-Appellant,

v.

EPIC SYSTEMS CORPORATION,
Defendant-Appellee.

2010-1291

Appeal from the United States District Court for the Northern District of Georgia in case no. 06-CV-2965, Chief Judge Jack T. Camp.

Decided: April 12, 2011

PAUL D. CLEMENT, King & Spalding LLP, of Washington, DC, argued for plaintiff-appellant. With him on the brief were DARYL JOSEFFER; and TIMOTHY G. BARBER and ADAM M. CONRAD, of Charlotte, North Carolina.

STEVEN D. MOORE, Kilpatrick Stockton LLP, of Atlanta, Georgia, argued for defendants-appellees. With him on the brief were WILLIAM H. BOICE, RUSSELL A. KORN, D. CLAY HOLLOWAY, and JASON D. GARDNER; and ADAM H. CHARNES of Winston-Salem, North Carolina.

Before NEWMAN, BRYSON, and LINN, *Circuit Judges*.

Opinion for the court filed by *Circuit Judge* LINN. Concurring opinion filed by *Circuit Judge* BRYSON. Dissenting opinion filed by *Circuit Judge* NEWMAN.

LINN, *Circuit Judge*.

McKesson Technologies Inc. ("McKesson") appeals the district court's grant of Epic Systems Corporation's ("Epic") renewed motion for summary judgment of noninfringement of claims 1-10, 12-14, and 16-18 of U.S. Patent No. 6,757,898 (the "'898 patent"). *McKesson Info. Solutions LLC v. Epic Sys. Corp.*, No. 06-cv-2965, 2009 WL 2915778 (N.D. Ga. Sept. 8, 2009) ("*Summary Judgment Order*"). Because McKesson is unable to attribute the performance of all the steps of the asserted method claims to a single party—namely, Epic's healthcare-provider customers—this court affirms the finding of noninfringement.

BACKGROUND

I. The Technology and Nature of the Dispute

McKesson's '898 patent is directed to an electronic method of communication between healthcare providers and patients involving personalized web pages for doctors and their patients. *See* '898 patent col.4 ll.3-44. This solution facilitates direct communication between patients and their doctors. *See id.* col.4 ll.24-40. For example, the '898 patent discloses a system whereby a patient can access visit-specific content online following every doctor visit. *Id.* col.4 ll.57-63. This online content "offers the patient significantly more information than he/she could have absorbed during a typical visit with the physician." *Id.* col.4 ll.63-65. This solution also increases efficiencies for both doctors and patients. *See id.* col.4

ll.24-40. For example, patients may submit appointment and prescription refill requests online and physicians may respond to these requests and manage callbacks at their convenience. *Id.* col.4 l.65–col.5 l.3; col.9 ll.37-39.

Epic is a privately owned software development company that licenses software to healthcare providers. One such product is the accused MyChart software. MyChart allows healthcare providers to associate medical records with a patient's personalized web page. MyChart also allows the patients to communicate with their healthcare provider online through these personalized MyChart web pages. In this way, patients are given access to their own medical records, treatment information, scheduling information, and other material.

Epic itself does not use the MyChart software. Rather, Epic licenses the MyChart software to healthcare providers. These licensed healthcare providers choose whether to offer MyChart as an option for their patients' use and none of these healthcare providers requires their patients to actually use the MyChart software. If a patient chooses to utilize the MyChart software, that patient "initiates a communication" to the provider by logging on to the healthcare provider's MyChart web page. Once authenticated, the patient is then presented with a personalized web page from which that patient may access his or her medical records and other such information.

II. Proceedings Before the District Court

On December 6, 2006, McKesson sued Epic in the United States District Court for the Northern District of Georgia alleging that Epic induced infringement of claims 1-10, 12-14, and 16-18 of the '898 patent by licensing MyChart to healthcare providers who subsequently

offered it to their patients. Claim 1 is representative of the asserted claims and reads as follows:

> 1. A method of automatically and electronically communicating between at least one health-care provider and a plurality of users serviced by the health-care provider, said method comprising the steps of:
>
> *initiating a communication by one of the plurality of users to the provider for information, wherein the provider has established a preexisting medical record for each user*;
>
> enabling communication by transporting the communication . . . ;
>
> electronically comparing content of the communication . . . ;
>
> returning the response to the communication automatically . . . ;
>
> said provider/patient interface providing a fully automated mechanism for generating a personalized page or area within the provider's Web site for each user serviced by the provider; and
>
> said patient-provider interface service center for dynamically assembling and delivering customer content to said user.

'898 patent col.44 l.60–col.45 l.24 (emphasis added).

Epic first moved for summary judgment of noninfringement on January 14, 2008, on the issue of joint infringement. The parties do not dispute that Epic's customers do not directly perform the first step of the asserted method claims, the "initiating a communication" step. The district court, in denying Epic's motion, relied on *BMC Resources, Inc. v. Paymentech, L.P.*, 498 F.3d 1373 (Fed. Cir. 2007), and found "questions of material

fact remain as to whether the providers using Epic's MyChart software direct and control the user to perform the first step of the method" based upon an expert declaration filed by McKesson. *McKesson Info. Solutions LLC v. Epic Sys. Corp.*, No. 06-cv-2965 (N.D. Ga. May 19, 2008).

Following claim construction and the close of discovery, Epic renewed its motion for summary judgment of noninfringement on the issue of joint infringement, citing both *Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318 (Fed. Cir. 2008), and McKesson's withdrawal of its expert declaration. Epic argued that because its customers neither directly perform the "initiating a communication" step of the asserted method claims nor exercise control or direction over another who performs this step, McKesson failed to demonstrate that a single party directly infringes the '898 patent and, accordingly, could not have succeeded on its claim of indirect infringement. The district court agreed and granted Epic's renewed motion for summary judgment of noninfringement on September 8, 2009. *Summary Judgment Order*.

McKesson appealed and this court has jurisdiction under 28 U.S.C. § 1295(a)(1).

DISCUSSION

This court reviews summary judgment of noninfringement without deference to ascertain whether genuine issues of material fact exist. *BMC Res.*, 498 F.3d at 1378. Summary judgment is appropriate only "if the pleadings, the discovery and disclosure materials on file, and any affidavits show that there is no genuine issue as to any material fact and that the movant is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(c). In assessing the evidence, all reasonable inferences are drawn in favor of the non-movant. *Del. Valley Floral*

Grp., Inc. v. Shaw Rose Nets, LLC, 597 F.3d 1374, 1379 (Fed. Cir. 2010).

McKesson alleged induced infringement, which requires a direct infringer. *BMC Res.*, 498 F.3d at 1379. A method claim is directly infringed only if each step of the claimed method is performed by a single party. *Id.* at 1378-79. McKesson and Epic agree that no single party performs every step of the asserted method claims. Thus, the sole issue presented by this appeal relates to whether the relationship between Epic's customers (MyChart providers) and the MyChart users is such that performance of the "initiating a communication" step may be attributed to the MyChart providers.

In both *BMC Resources* and *Muniauction*, this court confronted the situation where the actions of multiple parties combined to perform the steps of a claimed method, but no single party performed every step of the claimed method. This court concluded that "where the actions of multiple parties combine to perform every step of a claimed method, the claim is directly infringed only if one party exercises 'control or direction' over the entire process such that every step is attributable to the controlling party." *Muniauction*, 532 F.3d at 1329 (citing *BMC Res.*, 498 F.3d at 1380-81). "[T]he 'control or direction' standard is satisfied in situations where the law would traditionally hold the accused direct infringer vicariously liable for the acts committed by another party that are required to complete performance of a claimed method." *Id.* at 1330 (citing *BMC Res.*, 498 F.3d at 1379).

Recently, in *Akamai Technologies, Inc. v. Limelight Networks, Inc.*, 629 F.3d 1311 (Fed. Cir. 2010), the patentee sought to attribute the actions of multiple parties, each performing a subset of the claimed method steps, to a single party for a finding of direct infringement. Akamai's asserted method claims were directed towards a

content delivery service that permitted a content provider to outsource the storage and delivery of discrete portions of its website content. *Id.* at 1351. It was undisputed that Limelight performed all but the "tagging" and "serving" steps of the asserted method claims. *Id.* at 1317. Limelight instead provided a service to its customers along with the information necessary for its customers to perform the "tagging" and "serving" steps themselves. *Id.* Additionally, Limelight's standard customer contract, while not obligating Limelight's customers to perform the "tagging" or "serving" steps, explained that the customer would have to perform this step itself if the customer decided to take advantage of Limelight's service. *Id.* at 1321.

The court in *Akamai* held "there can only be joint infringement when there is an agency relationship between the parties who perform the method steps or when one party is contractually obligated to the other to perform the steps." *Id.* at 1320. The court concluded that Limelight's customers were not performing any of the claimed method steps as agents for Limelight nor were they contractually obligated to perform any of the claimed method steps. *Id.* Because Limelight did not perform all of the steps of the asserted method claims and there was no basis to attribute to Limelight the actions of its customers who carried out the remaining steps, this court affirmed the district court's judgment as a matter of law of noninfringement. *Id.* at 1322.

In this case, nothing indicates that MyChart users are performing any of the claimed method steps as agents for the MyChart providers. Nor does McKesson argue an agency relationship existed here. Indeed, McKesson faulted the district court for applying this court's control or direction test as one "that is satisfied only . . . through an employment or other agency relationship, such that

the other acts out of obligation rather than consent." McKesson Br. 27. McKesson instead argues that the special nature of the doctor-patient relationship is something more than a mere arms length relationship and is sufficient to provide attribution, because "[t]he phrase 'doctor's orders' says it all" and because of the existence of a doctor-patient privilege. *Id.* at 18, 31. This argument misses the mark. A doctor-patient relationship does not by itself give rise to an agency relationship or impose on patients a contractual obligation such that the voluntary actions of patients can be said to represent the vicarious actions of their doctors.

Nor is there anything indicating that MyChart users were contractually obligated to perform any of the claimed method steps on behalf of the MyChart providers. These facts are undisputed. MyChart users choose whether or not to initiate communications with their providers and are under no obligation to do so. As in both *Akamai* and *Muniauction*, MyChart providers simply control the users' access to MyChart. *Akamai* 629 F.3d at 1321 (finding Limelight's customers chose whether to perform the "tagging" or "scanning" steps); *Muniauction*, 532 F.3d at 1330 (finding that although the accused infringer controlled access to its system and instructed bidders on its use, that was insufficient to incur liability for direct infringement). Here, as in *Akamai*, MyChart users "acted principally for their own benefit and under their own control." *Akamai* 629 F.3d at 1321.

McKesson has identified no viable legal theory under which the actions of MyChart users may be attributed to Epic's customers. Without an agency relationship or contractual obligation, the MyChart users' actions cannot be attributed to the MyChart providers, Epic's customers. Thus, McKesson has failed to demonstrate that any single party directly infringes the '898 patent. Absent direct infringement, Epic cannot be liable for indirect infringe-

ment. *BMC Res.*, 498 F.3d at 1379 (stating "[i]ndirect infringement requires, as a predicate, a finding that some party amongst the accused actors has committed the entire act of direct infringement.").

McKesson argues that this court's precedents contravene ordinary principles of law involving concerted action. Specifically, McKesson compares this court's precedents with joint tortfeasor liability and vicarious copyright liability. Under tort law, according to McKesson, joint liability attaches "where the acts of each of two or more parties, standing alone, would not be wrongful, but together they cause harm to the plaintiff." McKesson Br. 20 (citing Prosser & Keeton on Torts § 52, at 354 (5th ed. 1984)). Similarly, McKesson cites various copyright cases where courts have found vicarious copyright liability stemming from a defendant's decision to profit from infringement "while declining to exercise a right to stop or limit it." McKesson Br. 23 (quoting *Metro-Goldwyn-Mayer Studios Inc. v. Grokster, Ltd.*, 545 U.S. 913, 930 (2005)).

This court finds McKesson's invitation to depart from our precedents unpersuasive, let alone beyond our authority as a three-judge panel. *See Newell Cos. v. Kenney Mfg. Co.*, 864 F.2d 757, 765 (Fed. Cir. 1988) ("This court has adopted the rule that prior decisions of a panel of the court are binding precedent on subsequent panels unless and until overturned *in banc*."). Patent law is a creature of statute and "expanding the rules governing direct infringement to reach independent conduct of multiple actors would subvert the statutory scheme for indirect infringement." *BMC Res.*, 498 F.3d at 1381. The notion of indirect patent infringement, encompassing contributory and induced infringement, already addresses the joint tortfeasor problem. *See* 35 U.S.C. §§ 271(b), (c). Indeed, an indirect infringer is a type of joint tortfeasor

because, while his actions alone do not harm the patentee, his actions along with another cause a single harm to the plaintiff. *See Aro Mfg. Co. v. Convertible Top Replacement Co.*, 377 U.S. 476, 500 (1964). That "single harm," however, is direct patent infringement, a strict-liability offense limited to those who practice each and every element of the claimed invention. *BMC Res.*, 498 F.3d at 1381; *Jurgens v. CBK, Ltd.*, 80 F.3d 1566, 1570 n.2 (Fed. Cir. 1996). Absent direct infringement, the patentee has not suffered a compensable harm. *BMC Res.*, 498 F.3d at 1379; *cf. Grokster*, 545 U.S. at 930 (stating "[o]ne infringes contributorily by intentionally inducing or encouraging *direct infringement* and infringes vicariously by profiting from *direct infringement* while declining to exercise a right to stop or limit it." (citations omitted) (emphases added)). Finally, in patent law, unlike in other areas of tort law, the patentee specifically defines the boundaries of his or her exclusive rights and provides notice to the public to permit avoidance of infringement. This stands in sharp contrast to the circumstances surrounding a joint tort where the victim has no ability to define the injurious conduct upfront and where, absent joint liability, the victim would stand uncompensated as a consequence.

McKesson also relies upon *Peerless Equipment Co. v. W.H. Miner, Inc.*, 93 F.2d 98 (7th Cir. 1937), in arguing that the regional courts of appeals have affirmed liability where one party performed most of the patented method and simply handed it over to another party to complete the method. *Id.* at 105 (finding liability where a seller of gears knowingly left it to customers to flatten the gears' crown, thereby "completing the final step of the [patented] process."). The *Peerless* opinion is neither binding nor persuasive. This court has time and again rejected liability where one party performed most of the patented method and left it to another party to complete the method in the absence of any contractual obligation or

agency relationship that would vicariously attribute the acts of the one party to the other. *See Akamai* 629 F.3d at 1322; *Muniauction*, 532 F.3d at 1330; *BMC Res.*, 498 F.3d at 1381-82. Nor is this court persuaded by the conclusory reasoning in *Peerless* affirming the district court's finding of contributory infringement. *See Peerless*, 93 F.2d at 105 (stating "we think that finding is correct.").

CONCLUSION

For the foregoing reasons, this court affirms the district court's grant of Epic's renewed motion for summary judgment of noninfringement of the '898 patent.

AFFIRMED

United States Court of Appeals for the Federal Circuit

MCKESSON TECHNOLOGIES INC. (formerly McKesson Information Solutions, LLC),
Plaintiff-Appellant,

v.

EPIC SYSTEMS CORPORATION,
Defendant-Appellee.

2010-1291

Appeal from the United States District Court for the Northern District of Georgia in Case No. 06-CV-2965, Chief Judge Jack T. Camp.

BRYSON, *Circuit Judge*, concurring.

I agree that the decision in this case is correct in light of this court's decisions in *BMC Resources*, *Muniauction*, and *Akamai Technologies*. Whether those decisions are correct is another question, one that is close enough and important enough that it may warrant review by the en banc court in an appropriate case.

United States Court of Appeals for the Federal Circuit

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2010-1291

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NEWMAN, *Circuit Judge*, dissenting.

The court again departs from the "prior panel rule," which requires appellate panels to conform to the earlier of conflicting panel precedent. Instead, the court again selectively applies some newly minted panel rulings while ignoring others, adding to the conflict with precedent. Our obligation is either to obtain *en banc* resolution of divergent statements in various panel opinions, or to follow the earlier

panel holding, as do the other circuits.[1] The court does neither. I must, respectfully, dissent.

The question is whether there can be infringement of a patented method, when a step of the method is performed by an entity that is not "controlled or directed" by the same entity that performs the other steps. Interactive methods have been enabled by advances in computer-based technology. In the McKesson method, a patient initiates inquiry into various kinds of information relating to the patient and maintained by the patient's physician; the panel majority holds that even if every step of the claimed method is performed there can be no infringement, on the theory that there is no direct infringement and thus no indirect infringement. Some recent panel holdings are of similar vein, holding that neither collaboration nor joint action nor facilitation nor authorization nor invitation can overcome the immutable barrier to infringement when all of the participating entities are not under the "control or direction" of a mastermind infringer.

According to the panel majority today, there can be no infringement of this interactive patent, on the theory that the physician does not control or direct the patient who performs the step of entering the system maintained by the physician. The court thus eliminates the patent incentive from such interactive procedures, rendering McKesson's new method, and all such interactive methods, open for infringement without redress. However, other panels of this court, and the Supreme Court, have held that there can be infringement liability when steps of the claimed method are performed by different entities. This new retrenchment of

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[1] *See Newell Cos., Inc. v. Kenney Mfg. Co.*, 864 F.2d 757, 765 (Fed. Cir. 1988); *cf. Teague v. City of Flower Mound, Tex.*, 179 F.3d 377, 383 (5th Cir. 1999) (referring to the "rule of orderliness").

the patent grant disserves commerce, fairness, and the innovation incentive.

The patent in suit, U.S. Patent No. 6,757,898, is directed to "a communication system for providing automated, electronic communications between at least one health-care provider and a plurality of users of the health-care provider." '898 patent, abstract. The '898 patent describes the operation of personalized web pages for patients. The patent states that "once the patient has logged into his/her own Web page," the patient can access data in the practitioner's scheduling and billing systems and a variety of practice-based services including "appointment requests and updates, prescription refills, online triage, health search information and the like." Col.4 ll.50-56.

Computer-implemented methods that are new, useful, nonobvious, described, enabled, and particularly claimed, are not excluded from the patent system simply because their performance involves more than one entity. Here the patient initiates the interaction with the health-care provider, by performing the first step of claim 1:

> 1. A method of automatically and electronically communicating between at least one health-care provider and a plurality of users serviced by the health-care provider, said method comprising the steps of:
>
> *initiating a communication by one of the plurality of users to the provider for information, wherein the provider has established a preexisting medical record for each user*;
>
> enabling communication by transporting the communication through a provider/patient interface over an electronic communication network to a Web

> site which is unique to the provider, whereupon the communication is automatically reformatted and processed or stored on a central server, said Web site supported by or in communication with the central server through a provider-patient interface service center;
>
> electronically comparing content of the communication with mapped content, which has been previously provided by the provider to the central server, to formulate a response as a static or dynamic object, or a combined static and dynamic object; and
>
> returning the response to the communication automatically to the user's computer, whereupon the response is read by the user or stored on the user's computers
>
> said provider/patient interface providing a fully automated mechanism for generating a personalized page or area within the provider's Web site for each user serviced by the provider; and
>
> said patient-provider interface service center for dynamically assembling and delivering custom content to said user.

All but the first step are performed by or controlled or directed by the health-care provider. The court today holds that the claim cannot be infringed as a matter of law, on the theory that a "single-entity rule" is violated because the provider does not control or direct the patient who initiates the communication, in that the patient is neither the agent of the health-care provider nor contractually obligated to initiate the communication. Maj. Op. at 8-9. There is no such rule of law. Even the recent creation of a "single-entity rule" by this court does not go that far.

Interactive methods that meet all of the conditions and requirements of the Patent Act are fully entitled to participate in the patent system. The court's removal of interactive methods from the purview of the patent system, through its newly minted and now enlarged "single-entity rule," is contrary to law and policy. Conflicts in precedent require resolution, not enlargement, for inconsistent precedent is as much a deterrent to innovation as is elimination of the patent right entirely.

I

CONFLICT WITH PRECEDENT

Precedent requires that: "For infringement of a process invention, all of the claimed steps of the process must be performed." *EMI Grp. N. Am., Inc. v. Intel Corp.*, 157 F.3d 887, 896 (Fed. Cir. 1998). The panel majority now rules that: "A method claim is directly infringed only if each step of the claimed method is performed by a single party." Maj. Op. at 6. Since the user (patient), not the provider (physician), decides whether to initiate the communication, the court holds that the provider does not "control or direct" whether the user takes this initiating step. Thus the court holds, first, that the method claim cannot be directly infringed, as a matter of law. The court then holds that without direct infringement there cannot be indirect infringement, such as induced or contributory infringement, as a matter of law. Thus the court concludes that the claims can never be infringed, although the patent meets every requirement of patentability and every step of the claimed method is practiced. These rulings and conclusion are contrary to statute and precedent.

The patent statute grants to every patentee the right to exclude others from practicing the patented invention:

> 35 U.S.C. §154(a)(1) Every patent shall contain a short title of the invention and a grant to the patentee, his heirs and assigns, of the right to exclude others from making, using, offering for sale, or selling the invention . . . .

35 U.S.C. §154(a)(1) (2006). "The franchise which the patent grants, consists altogether in the right to exclude every one from making, using, or vending the thing patented, without the permission of the patentee." *Bloomer v. McQuewan*, 55 U.S. 539, 549 (1852); *see also Crown Die & Tool Co. v. Nye Tool & Machine Works*, 261 U.S. 24, 36 (1923). The present statute codifies this right:

> 35 U.S.C. §271(a) Except as otherwise provided in this title, whoever without authority makes, uses or sells any patented invention, within the United States during the term of the patent therefor, infringes the patent.

35 U.S.C. §271(a) (2006). A patent that can never be infringed is not a patent in the definition of the law, for a patent that cannot be infringed does not have the "right to exclude." This court's elimination of infringement, by creating a new but far-reaching restriction, is inappropriate. "[C]ourts 'should not read into the patent laws limitations or conditions which the legislature has not expressed.'" *Bilski v. Kappos*, 130 S.Ct. 3218, 3226 (2010) (quoting *Diamond v. Diehr*, 450 U.S. 175, 182 (1981)).

These fundamental principles have not changed; they are the foundation of the patent system.

As technology advanced, the variety of invention and modes of infringement has been accommodated by statute, by precedent, and if needed by legislation, in fidelity to the

purposes and policy of patent law. For example, the liability of "participants" in infringement was summarized by Professor Robinson:

> The nature of the act of infringement is indicated by that of the exclusive right which it invades. . . . [E]very method by which the invention can be made available for the benefit of the infringer, and any person who participates in any wrongful appropriation of the invention becomes thereby a violator of the rights protected by the patent.

3 William C. Robinson, *The Law of Patents for Useful Inventions* §897 (1890) (reprint 1972). This foundation is violated by the introduction of an absolute bar to enforcement of patents that are directed to information-age electronic methods, simply because more than one entity is involved. Neither statute nor precedent supports this court's pronouncement that the patentee's right to exclude is limited to situations in which a single entity performs or controls or directs every step of the claimed method, whatever the method and whatever the relationship among the participants. Precedent elaborating on direct and indirect infringement had evolved to accommodate, not to limit, the patentee's right to exclude.

The district court deemed itself bound by this court's aberrant "single entity" decisions, although not without remarking on the flaws:

> [T]he single entity rule and *BMC*'s interpretation thereof severely limits the protection provided for patents which would otherwise be valid and enforceable. . . . As long as the sale of a product constitutes an arms length transaction between the customer and the infringing company, which is insufficient to create vicarious liability, the patent

> holder would likely have no redress against the infringer. This result weakens the policy of providing protection to those who devote the time and resources to develop otherwise novel and patentable methods.

McKesson Info. Solutions LLC v. Epic Sys. Corp., No. 06-cv-2965, 2009 WL 2915778, at *7 (N.D. Ga. Sept. 8, 2009). The district court referred to *BMC Resources, Inc. v. Paymentech, L.P.*, 498 F.3d 1373 (Fed. Cir. 2007), *Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318 (Fed. Cir. 2007), and *Global Patent Holdings, LLC v. Panthers BRHC LLC*, 586 F. Supp. 2d 1331 (S.D. Fla. 2008), *aff'd*, 318 F. App'x 908 (Fed. Cir. 2009) (Table), and stated that these cases "compel" its flawed decision.

In *BMC Resources* the defendant was one of three independent entities needed to perform the claim steps of debit network, financial institution, and payment services provider; the court observed that the defendant payment services provider did not control or direct either the debit networks or the financial institutions that performed the other steps. In *Muniauction* this court held that the defendant, who controlled access to its auction system and instructed bidders on its use, was not liable for direct infringement, but did not hold that indirect infringement was barred. In *Global Patent* a district court applied the evolving "single-entity rule" and held that the patentee could not state a claim for either direct or indirect infringement although the defendant "puts Javascript programs on the remote user's computer to allow the process to begin." 586 F. Supp. 2d at 1335. Although the *BMC Resources* decision is supportable on its facts, the enlargement of its holding is not.

Applying these decisions to the '898 patent, the district court held that because the patient independently initiates the interaction with the physician's records, there can be no joint infringement and thus no direct infringement of the claim. Applying the rule that there must be direct infringement before there can be indirect infringement, *see Aro Mfg. Co. v. Convertible Top Replacement Co., Inc.*, 377 U.S. 476, 483 (1964) (referring to "the fundamental precept that there can be no contributory infringement in the absence of a direct infringement."), the court held that McKesson could not enforce its patent against anyone. This court agrees, although it is not disputed every major step of the patented process is practiced by a single entity, with authorized initiation by the patient.

This court's error is the pronouncement of the "single-entity rule" as an absolute rule of law—for the multiple independent entities required to carry out the claimed method in *BMC Resources* could have led to a fact-based decision of non-liability on application of the ordinary rules of tort liability. Instead, the "control or direction" requirement is announced as extending to all interactive situations, whatever the relationship of the participants and whatever their participation. Here, for example, the "uncontrolled" entity, the patient, initiates the process by accessing the physician's system using the access code provided by the physician; the physician's office then performs the other steps of the method. The court today holds that such a claim cannot be infringed, whether on a theory of joint or collaborative or induced infringement. However, no rule of law, no precedent, prohibits patenting and enforcing a method that is performed by interacting entities. The cases from which the court created this theory do not require otherwise.

Indeed, the cases cited for support in *BMC Resources* and *Muniauction* do not deal with the form of interactive situation to which they are now being applied. These cases include *Canton Bio-Med., Inc. v. Integrated Liner Technologies., Inc.*, 216 F.3d 1367, 1370 (Fed. Cir. 2000) (explaining that the "all-elements rule" of the doctrine of equivalents applies to method claims); *General Foods Corp. v. Studiengesellschaft Kohle mbH*, 972 F.2d 1272, 1274 (Fed. Cir. 1992) (explaining that "each claim is an entity which must be considered as a whole," and reversing invalidity of method claims for double patenting (emphases omitted)); *Joy Technologies, Inc. v. Flakt, Inc.*, 6 F.3d 770, 773 (Fed. Cir. 1993) ("[T]he sale of equipment to perform a process is not a sale of the process within the meaning of section 271(a)"); *Dynacore Holdings Corp. v. U.S. Philips Corp.*, 363 F.3d 1263, 1272 (Fed. Cir. 2004) ("Indirect infringement, whether inducement to infringe or contributory infringement, can only arise in the presence of direct infringement, though the direct infringer is typically someone other than the defendant accused of indirect infringement"); *NTP, Inc. v. Research in Motion*, 418 F.3d 1282, 1318 (Fed. Cir. 2005) ("[A] process cannot be used 'within' the United States as required by section 271(a) unless each of the steps is performed within this country"). I am surprised at my colleagues' holding that these cases require an absolute "single-entity rule" of infringement, for none of these cases turned on whether different entities independently or interactively perform different steps of a method claim.

My colleagues mention the *Aro* cases on contributory infringement as requiring that there can never be joint or collaborative infringement. That interpretation is inapt. In *Aro Manufacturing Co. v. Convertible Top Replacement Co., Inc.*, 365 U.S. 336 (1961) the Court held that car owners did not directly infringe claims directed to a convertible top when the car owners replaced the fabric. In *Aro Manufac-*

turing Co. v. Convertible Top Replacement Co., Inc., 377 U.S. 476 (1964), the Court drew upon common-law principles, not a new "rule of law," in stating that "a contributory infringer is a species of joint-tortfeasor, who is held liable because he has contributed with another to the causing of a single harm to the plaintiff." *Id.* at 500. There was no issue of single entities or of control or direction. Earlier cases recognized the tortious nature of infringement, and the foundation of tort remedy. *See*, *e.g.*, *Carbice Corp. of Am. v. Am. Patents Dev. Corp.*, 283 U.S. 27, 33 (1931) ("Infringement, whether direct or contributory, is essentially a tort, and implies invasion of some right of the patentee."); *Dowagiac Mfg. Co. v. Minnesota Moline Plow Co.*, 235 U.S. 641, 648 (1915) ("[T]he exclusive right conferred by the patent was property, and the infringement was a tortious taking of a part of that property.").

The complainant here is not attempting to sue all patients and physicians who use the patented system, but is seeking to enforce the patent against the purveyor of the system, on a theory of inducement to infringe. The patentee's position is that the patent is directly infringed jointly, and that the purveyor of the claimed method thereby induces direct infringement. The common-law concept of joint tortfeasor has long been established in the patent arena and in its application the cases have turned on their particular facts, not on some indefeasible "single entity" bar created as a new rule of law. Questions of joint liability turned on participation, collaboration, or other relevant facts, as courts applied the experience of the common law in a variety of factual situations. The state of the law of joint infringement was summarized in a jury instruction in *On Demand Machine Co. v. Ingram Industries, Inc.,* 442 F.3d 1331 (Fed. Cir. 2006), as follows:

> It is not necessary for the acts that constitute infringement to be performed by one person or entity. When infringement results from the participation and combined action(s) of more than one person or entity, they are all joint infringers and jointly liable for patent infringement. Infringement of a patented process or method cannot be avoided by having another perform one step of the process or method. Where the infringement is the result of the participation and combined action(s) of one or more persons or entities, they are joint infringers and are jointly liable for the infringement.

442 F.3d at 1344-45. This court stated that "[w]e discern no flaw in this instruction as a statement of law," although the court concluded as to that case that "no reasonable jury could find infringement, on the correct claim construction." *Id.* at 1345.

The present disregard of precedent is reflected in another recent decision, where the court held that when the two entities "formed a strategic partnership, enabled [nonetheless] their two programs to work together, and collaborated to sell the two programs as a unit," there could be no infringement of the asserted method claims, as a matter of law. *Golden Hour Data Sys., Inc. v. emCharts, Inc.*, 614 F.3d 1367, 1371 (Fed. Cir. 2010). The court, reversing the jury verdict, found that "the evidence of control or direction was insufficient as a matter of law to uphold a finding of joint infringement." *Id.* at 1380.

Other recent rulings of this court are inconsistent. In *Cross Medical Products v. Medtronic Sofamor Danek*, 424 F.3d 1293 (Fed. Cir. 2005) the apparatus claim required that an orthopedic implant is in contact with bone inside the body; the court held that the implant before installation did

not directly infringe the apparatus claim, and that the implant provider's liability for direct infringement could not turn on the act of a surgeon installing the implant as directed, because the surgeon was not an agent of the provider; nonetheless, this court remanded for determination of whether the provider was liable for indirect infringement. In *Fantasy Sports Properties v. Sportsline.com, Inc.*, 287 F.3d 1108 (Fed. Cir. 2002) the claim was for a computer-simulated football game with certain features; the district court held that a defendant-vendor of the software/game could not be liable for contributory infringement because the plaintiff-patentee did not prove that any users operated the software in an infringing manner. However, in contrast with the present holding, the court left open the possibility that the vendor was liable for direct infringement, rejecting the vendor's argument that it could not be liable for direct infringement because the software was operated by users on their own computers, outside of the control and direction of the vendor. The court held that "[t]he users of the [accused] product therefore access the necessary software to play fantasy football at [the vendor's] server on the Internet, and thus that software is maintained and controlled by [the vendor]." *Id.* at 1119.

Again in contrast with these principles, in *Akamai Technologies, Inc. v. Limelight Networks, Inc.*, 629 F.3d 1311 (Fed. Cir. 2010), a panel of the court proposed to promote a version of these aberrant holdings to "Federal Circuit law," stating:

> This court therefore holds as a matter of Federal Circuit law that there can only be joint infringement when there is an agency relationship between the parties who perform the method steps or when one party is contractually obligated to the other to perform the steps.

629 F.3d at 1320. However, if this change of law is to be "a matter of Federal Circuit law," conflicting holdings must be overturned en banc, not by a three-judge panel. In confusing contrast, in *Centillion Data Systems, LLC v. Qwest Communications International, Inc.*, 631 F.3d 1279 (Fed. Cir. 2011), a panel of this court, citing *NTP, Inc. v. Research in Motion, Ltd.*, 418 F.3d 1282 (Fed. Cir. 2005), held that, unlike a claim to an interactive "method," direct infringement of a claim to an interactive "system," wherein elements of the system are physically controlled by different entities such as an independent "user," is not subject to a "single-entity rule":

> By causing the system as a whole to perform this processing and obtaining the benefit of the result, the customer has 'used' the system under §271(a). It makes no difference that the back-end processing is physically possessed by [the defendant]. The customer is a single 'user' of the system and because there is a single user, there is no need for the vicarious liability analysis from *BMC* or *Cross Medical*.

631 F.3d at 1285. And in *Uniloc USA, Inc. v. Microsoft Corp.*, 632 F.3d 1292 (Fed. Cir. 2011) this court wrote "[t]hat other parties are necessary to complete the environment in which the claimed element functions does not necessarily divide the infringement between the necessary parties." 632 F.3d at 1309. The panel majority's ruling today further adds to the confusion of "use" of interactive inventions, as the panel majority holds that an interactive "method" is only used when a single entity performs or controls or directs every step of the claimed method, even if, as here, a single entity "cause[s] the [process] as a whole to perform ... and obtain[s] the benefit of the result." *Centillion*, 631 F.3d at 1285. As "Congress did not use technical or occult

phrases" in "defining the extent of the rights and privileges secured to the patentee," *Bauer & Cie v. O'Donnell*, 229 U.S. 1, 11 (1913), we too should avoid "technical or occult" interpretations of §271(a). Panels of this court distinguishing between practice of an element of a system, and practice of an element of a method, does not add clarity or predictability to patent law.

Earlier cases applied the law of infringement as a straightforward matter of tortious responsibility. For example, in *Fromson v. Advance Offset Plate, Inc.*, 720 F.2d 1565 (Fed. Cir. 1985), the court held that contributory infringement was possible when a step of a method claim was practiced by the customer, and explained that "because [the manufacturer's] customers, not [the manufacturer], applied the diazo coating, [the manufacturer] cannot be liable for direct infringement with respect to those plates but could be liable for contributory infringement." *Id.* at 1568. This has been the law. It has never had en banc reversal.

II

THE MCKESSON CLAIMS

McKesson argues that there is joint infringement even on the "control or direction" theory, stating that the healthcare provider does exercise control or direction of the use of the MyChart system by patients. McKesson states that:

> Before patients can even use MyChart, healthcare providers enter into a broader doctor-patient relationship, enroll patients in the program, and create personalized webpages for the patients, in order to facilitate the healthcare providers' provision of services to patients. Only enrolled patients with usernames and passwords may access their personalized webpages created by the healthcare providers,

> which are linked to medical records created by providers for each patient. Patients enter into a contractual agreement covering their use of MyChart. The healthcare providers provide instructions on every aspect of using the webpages. They can end a patient's use of the system at any time. And they even formulate some communications for patients.

McKesson Br. 16-17 (internal citations omitted). My colleagues deem this relationship irrelevant, ruling that it is the patient's choice whether to initiate a communication, and use of the system is not required by the physician.

McKesson argues that the doctor-patient relationship is far from the "arms-length cooperation" that was held inadequate to provide joint infringement in *Muniauction* or in *BMC Resources*, and that the control-or-direction test must be read in light of general principles of tort liability, citing Restatement Second of Torts §875 ("Each of two or more persons whose tortious conduct is a legal cause of a single and indivisible harm to the injured party is subject to liability to the injured party for the entire harm."); §876(a) ("For harm resulting to a third person from the tortious conduct of another, one is subject to liability if he does a tortious act in concert with the other or pursuant to a common design with him"); §877(c) ("For harm resulting to a third person from the tortious conduct of another, one is subject to liability if he permits the other to act upon his premises or with his instrumentalities, knowing or having reason to know that the other is acting or will act tortuously").

No patent principle or public policy, and no statutory requirement, warrants departure from these common law principles. *See PharmaStem Therapeutics, Inc. v. ViaCell, Inc.*, 491 F.3d 1342, 1358 (Fed. Cir. 2007) ("The 1952 Act did not make a substantive change in the law of contributory

infringement, but it divided the judicially created category of contributory infringement into two statutory subsections."). The question is that "of identifying the circumstances in which it is just to hold one individual accountable for the actions of another." *Sony Corp. Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 435 (1984) (discussing copyright infringement). To the extent that recent panel rulings including *BMC Resources*, *Muniauction*, *Golden Hour*, and *Akamai* appear to stand for an absolute requirement that there must be direct infringement by a single entity who performs or controls or directs every step of the claimed method before there can be indirect infringement, these rulings are contravened by precedent.

This case does not raise the specter of a patentee "impermissibly broaden[ing] the physical or temporal scope of the patent . . . in a manner that has anticompetitive effects," in the words of *Princo Corp. v. ITC*, 616 F.3d 1318, 1328 (Fed. Cir. 2010) (en banc). To the contrary, this is a case of new technology adapted to public benefit—an advance supported by patent policy. Today's holding, and the few recent cases on which it builds, have the curious effect of removing from patent eligibility the burgeoning body of interactive computer-managed advances.

A patent that cannot be enforced on any theory of infringement, is not a statutory patent right. It is a cynical, and expensive, delusion to encourage innovators to develop new interactive procedures, only to find that the courts will not recognize the patent because the participants are independent entities. From the error, confusion, and unfairness of this ruling, I respectfully dissent.

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF GEORGIA
ATLANTA DIVISION

MCKESSON INFORMATION SOLUTIONS LLC, Plaintiff, vs. EPIC SYSTEMS CORPORATION, Defendant.	CIVIL ACTION FILE 1:06-cv-2965-JTC

J U D G M E N T

This action having come before the court, Honorable Jack T. Camp, United States District Judge, for consideration of the parties' motions for summary judgment, and the court having granted in part the defendant's motion as to the plaintiff's claims of infringement, it is

Ordered and Adjudged that the plaintiff recover nothing, that the defendant recover its costs of this action, and that this action be, and the same hereby is **dismissed.**

Dated at Atlanta, Georgia, this 11th day of February, 2010.

JAMES N. HATTEN
CLERK OF COURT
By: s/Sherry Gibbons
Sherry Gibbons
Deputy Clerk

Prepared, Filed, and Entered
in the Clerk's Office
February 11, 2010
James N. Hatten
Clerk of Court
By: s/Sherry Gibbons
Sherry Gibbons
Deputy Clerk

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF GEORGIA
ATLANTA DIVISION

MCKESSON INFORMATION SOLUTIONS LLC, Plaintiff, v. EPIC SYSTEMS CORPORATION. Defendant.	CIVIL CASE NO. 1:06-CV-2965-JTC

O R D E R

This is a patent infringement action brought by Plaintiff McKesson Information Solutions LLC ("McKesson"). The technology at issue in this case involves a method for a health-care provider and a patient to communicate automatically and electronically with each other. The allegedly infringing product is MyChart, a health-care information software product made and sold by Defendant Epic Systems Corporation ("Epic"). Previously, the Court granted in part Epic's motion for summary judgment with respect to McKesson's claims of infringement. (Order, Sept. 6, 2009.) The Court held that McKesson could not show that any single party directly infringes the patent at issue. (Id. at 14.)

The Court, however, did not rule on McKesson's Motion for Summary Judgment of No Inequitable Conduct [# 313] and Defendant's Motion for Summary Judgment on its counterclaims of invalidity and unenforceability [#

314]. Instead, the Court directed the parties to submit supplemental briefs stating their position as to whether it was necessary for the Court to address the remaining summary judgment motions in light of its ruling of non-infringement.

In response to the Court's Order, McKesson contends that the Court's finding of non-infringement rendered moot the invalidity counterclaims. Thus, it contends that the Court should deny without prejudice its motion for summary judgment on inequitable conduct, dismiss without prejudice Epic's counterclaims of inequitable conduct and invalidity, and enter a final judgment of non-infringement. If the Federal Circuit finds that the Court erred in its finding of non-infringement, the parties can re-assert their motions upon remand. In contrast, Epic requests that the Court decide the remaining motions, set this case for trial on the counterclaims, and fully resolve its counterclaims prior to any appeal.

The Federal Circuit has explained that once a district court finds that a patent was not infringed, the court may exercise its discretion and dismiss without prejudice invalidity and unenforceability counterclaims or dispose of the counterclaims on the merits. Liquid Dynamics Corp. v. Vaughan Co., Inc., 355 F.3d 1361, 1370-71 (Fed. Cir. 2004); Nystrom v. Trex Co., Inc., 339 F.3d 1347, 1350-51(Fed. Cir. 2003); Phonometrics v. Northern Telecom, Inc.,

133 F.3d 1459, 1468 (Fed. Cir. 1998); see also Atlanta Attachment Co. v. Leffett & Platt, Inc., No. 1:05cv1071-ODE, 2007 WL 5011980, at *9-10 (N.D. Ga. Feb. 23, 2007) (Evans, J.) (dismissing without prejudice invalidity counterclaims after finding non-infringement).[1] In light of the Court's prior ruling of non-infringement, the Court finds that dismissing the counterclaims without prejudice and entering final judgment is the appropriate course of action in this case. The entry of final judgment will allow the parties to appeal the dispositive issue of non-infringement without awaiting a jury verdict on Epic's counterclaims; counterclaims that are potentially moot in light of the Court's finding of non-infringement. If the Federal Circuit finds that the Court erred in determining the issue of infringement and remands the case, Epic can reassert its counterclaims, and the Court will consider them at that time.

The Court **DISMISSES** without prejudice Epic's counterclaims and **DENIES** without prejudice the outstanding motions for summary judgment [# 313 & # 314]. Consistent with this Courts September 6, 2009, Order

[1] Although Epic contends that these decisions are wrongly decided in light of the Supreme Court's decision in Cardinal Chem. Co. v. Morton Int'l, 508 U.S. 83, 113 S. Ct. 1967 (1993), the Federal Circuit has addressed this issue and held that "[t]he Supreme Court's decision in Cardinal Chemical . . . does not preclude this discretionary action by the district court. Cardinal Chemical simply prohibits us . . . from vacating a judgment of invalidity when we conclude that a patent has not been infringed . . . ." Phonometrics, 133 F.3d at 1468; see also Liquid Dynamics, 355 F.3d at 1370-71.

granting in part summary judgment for Epic, the Court **DIRECTS** the Clerk to enter final judgment in this case.

SO ORDERED, this 10th day of February, 2010.

JACK T. CAMP
UNITED STATES DISTRICT JUDGE

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF GEORGIA
ATLANTA DIVISION

MCKESSON INFORMATION SOLUTIONS LLC,

Plaintiff,

v.

EPIC SYSTEMS CORPORATION.

Defendant.

CIVIL CASE NO.
1:06-CV-2965-JTC

O R D E R

This matter is currently before the Court on Plaintiff's motion for summary judgment of no inequitable conduct [#313], Defendant's motion for summary judgment [#314], and several procedural motions filed by both parties [#346, #378, #382]. Defendant moves for summary judgment on Plaintiff's claims of patent infringement on the grounds that the patent-in-suit is invalid or, in the alternative, that Defendant's product does not infringe the patent-in-suit. Plaintiff moves for summary judgment on Defendant's inequitable conduct defense. For the following reasons, the Court **GRANTS** Defendant's motion to strike [#378], **GRANTS in part** Defendant's motion for summary judgment [#314] with respect to Plaintiff's claims of infringement, and reserves ruling on the remaining issues.

I. Background[1]

The technology at issue in this patent infringement action involves a method for a health-care provider and a patient to communicate automatically and electronically with each other. The patent-in-suit is U.S. Patent No. 6,757,898 ("the '898 patent"), owned by Plaintiff McKesson Information Solutions LLC ("McKesson"). The allegedly infringing product is MyChart, a health-care information software product made and sold by Defendant Epic Systems Corporation ("Epic").

A. The '898 Patent

The '898 patent relates to "an automated system of electronic communications between a health-care or medical service provider and his/her patient, for the purpose of providing a simple, reliable and effective interface for rapidly exchanging inquiries, responses, data, services and information between [] both parties for the mutual benefit and satisfaction of each." '898 patent, col. 1, ll. 5-13. The '898 patent contains eighteen claims. '898 patent, cols. 44-46. McKesson alleges that Epic's MyChart product infringes claims 1-10, 12-14, and 16-18 of the '898 patent.

[1] The Court views the facts in the light most favorable to Plaintiff, as the nonmovant, and draws all reasonable inferences in Plaintiff's favor. United States v. Four Parcels, 941 F.2d 1428, 1437 (11th Cir. 1991).

Claim 1 of the '898 patent is a method claim, which recites "[a] method of automatically and electronically communicating between at least one health-care provider and a plurality of users serviced by the health-care provider . . ." '898 patent, col. 44, ll. 60-62. The method comprises the following steps:

- initiating a communication by one of the plurality of users to the provider for information, wherein the provider has established a preexisting medical record for each user;
- enabling communication by transporting the communication through a provider/patient interface over an electronic communication network to a Web site which is unique to the provider,
- whereupon the communication is automatically reformatted and processed or stored on a central server, said Web site supported by or in communication with the central server through a provider-patient interface service center;
- electronically comparing content of the communication with mapped content, which has been previously provided by the provider to the central server, to formulate a response as a static or dynamic object, or a combined static and dynamic object; and
- returning the response to the communication automatically to the user's computer, whereupon theresponse is read by the user or stored on the user's computer,
- said provider/patient interface providing a fully automated mechanism for generating a personalized page or area within the provider's Web site for each user serviced by the provider; and
- said patient-provider interface service center for dynamically assembling and delivering custom content to said user.

'898 patent, col. 44, ll. 64 - col. 45, ll. 24. The remaining claims of the '898 patent are dependent upon claim 1, in that they refer to and incorporate the method recited in claim 1. '898 patent, col. 45-46.

B. MyChart

MyChart is a software system that was developed by Epic. (Def.'s Statement of Material Facts ("DSMF") ¶ 39; Pl.'s Resp. to DSMF ¶ 39.) Epic is not a healthcare provider and it does not use MyChart to communicate with patients of a healthcare provider. (DSMF ¶¶ 543-544; Pl.'s Resp. to DSMF ¶¶ 543-544.) Rather, Epic licenses its MyChart software to various healthcare providers, including hospitals, medical groups, and pediatric facilities. (DSMF ¶ 546; Pl.'s Resp. to DSMF ¶ 546.) Those healthcare providers then use MyChart to allow their patients to access certain information, such as the patient's medical records, treatment information, and scheduling information. (DSMF ¶ 547; Pl.'s Resp. to DSMF ¶ 547.)

The initial step of "initiating a communication" on MyChart is performed by a patient or other user, not by a healthcare provider. (DSMF ¶ 548; Pl.'s Resp. to DSMF ¶ 548.) A patient may initiate a communication with a healthcare provider using MyChart by logging into the provider's MyChart webpage using the patient's web browser and by entering a username and password. (DSMF ¶ 550; Pl.'s Resp. to DSMF ¶ 550; Bysinger

Dep. 405:17-406:5.) Patients may freely choose whether to initiate a communication and log into MyChart; healthcare providers who use MyChart do not require their patients to sign up for or to use MyChart. (DSMF ¶¶ 551-554; Pl.'s Resp. to DSMF ¶¶ 551-554. Thus, it is the patient's choice whether or not to initiate a communication with the provider. (Bysinger Dep. 405:17-24.)

II. Legal Standard

Summary judgment is appropriate only when there are no genuine issues of material fact to be presented to a jury for decision and the moving party is entitled to judgment as a matter of law. Fed. R. Civ. P. 56. The substantive law applicable to the case determines which facts are material. Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 248, 106 S. Ct. 2505, 2510 (1986). In considering the motion for summary judgment, the Court "should 'resolve all reasonable doubts about the facts in favor of [Plaintiff],' . . . and draw 'all justifiable inferences . . . in [Plaintiff's] favor . . . .'" Four Parcels, 941 F.2d at 1437. The Court may not weigh conflicting evidence nor make credibility determinations. Hairston v. Gainesville Sun Publ'g Co., 9 F.3d 913, 919 (11th Cir. 1993), reh'g denied, 16 F.3d 1233 (1994) (en banc).

When the non-moving party bears the burden of proof at trial, as is the case here, the moving party is not required to support its motion with

affidavits or similar material negating the non-moving party's claims. Fitzpatrick v. City of Atlanta, 2 F.3d 1112, 1115 (11th Cir. 1993). Instead, with respect to Plaintiff's claims of infringement, Defendant may point out to the Court an absence of evidence to support an essential element of Plaintiff's case. Id. Plaintiff must then respond with sufficient evidence to withstand a directed verdict motion at trial. Fed. R. Civ. P. 56(e); Hammer v. Slater, 20 F.3d 1137, 1141 (11th Cir. 1994) (citations omitted).

III. Defendant's Motion for Summary Judgment [#314]

Epic previously moved for summary judgment on the grounds that: (1) providers using Epic's MyChart software do not perform the step of "initiating a communication;" and (2) MyChart providers do not direct or control users of MyChart to initiate the communication. The Court denied Epic's initial motion for summary judgment because: (1) the step of initiating a communication by the user is not a part of the method itself, rather the method begins *after* the user has initiated the communication; and (2) even if initiation by the user is an integral part of the method, McKesson offered sufficient evidence to create a genuine issue of material fact concerning whether healthcare providers implementing MyChart direct and control MyChart users to initiate the communication. (Order, May 16, 2008 at 5-9.)

Epic has again moved for summary judgment on McKesson's

infringement claims on the same grounds. Upon review of recent case law and the evidence presently before the Court, the Court now finds that Epic is entitled to summary judgment on McKesson's claims of infringement.

A. The Applicable Law

In BMC Res., Inc. v. Paymentech, L.P., 498 F.3d 1373, 1378 (Fed. Cir. 2007), the United States Court of Appeals for the Federal Circuit addressed "the proper standard for joint infringement by multiple parties of a single claim." 498 F.3d at 1378. "Direct infringement requires a party to perform or use each and every step or element of a claimed method or product." Id. (internal citations omitted). In the context of method patent claims, "infringement occurs when a party performs all of the steps of the process." Id. at 1379. However:

> A party cannot avoid infringement . . . by contracting out steps of a patented process to another entity. In those cases, the party in control would be liable for direct infringement. It would be unfair indeed for the mastermind in such situations to escape liability.

Id. at 1381. Under BMC Res., a party may be held liable for infringing a method patent claim when that party either performs each step of the patented method or when that party directs and controls the performance of any step of the patented method which it does not perform itself.

Recent case law – decided *after* this Court originally ruled on this issue – has clarified the BMC standard. See Muniauction, Inc. v. Thomson Corp.,

532 F.3d 1318 (Fed. Cir. 2008), *cert. denied*, 129 S. Ct. 1585 (2009); Global Patent Holdings, LLC v. Panthers BRHC LLC, 586 F. Supp. 2d 1331 (S.D. Fla. 2008), *aff'd*, 318 F. App'x 908 (Fed. Cir. 2009).

1. Muniauction, Inc. v. Thomson Corp.

The Federal Circuit's recent decision in Muniauction indicates that controlling access to an online method and instructing users on how to use the method is insufficient evidence of direction and control. The patent at issue in Muniauction claimed "electronic methods for conducting 'original issuer auctions of financial instruments.'" Muniauction, Inc. v. Thomson Corp., 532 F.3d 1318, 1321 (Fed. Cir. 2008), *cert. denied*, 129 S. Ct. 1585 (2009). The method was directed to municipal bond auctions which were to be conducted over the internet. Id.

The patent provided an integrated system on a single server which allowed "[bond] issuers to run the auction and bidders to prepare and submit bids using a conventional web browser, without the use of other separate software." Id. at 1322. The parties did not dispute that no single party performed every step of the asserted claims because the "inputting step" of the patented method required "inputting data associated with at least one bid for at least one fixed income financial instrument into said bidder's computer via said input device." Id. at 1328-29, n.5.

In Muniauction, the Federal Circuit restated the rule set forth in BMC Res. that "where the actions of multiple parties combine to perform every step of a claimed method, the claim is directly infringed only if one party exercises 'control or direction' over the entire process such that every step is attributable to the controlling party, i.e., the 'mastermind.'" Id. at 1329 (citing BMC Res., 498 F.3d at 1380-81). The issue before the Federal Circuit in Muniauction was whether the auctioneer sufficiently controlled or directed the actions of the bidder – in inputting the bidder's bid on the bidder's computer – such that the auctioneer could be said to have performed every step of the patented method. Id.

The Federal Circuit held that the defendant did not perform every step of the claimed method nor had another party perform the steps on its behalf, and, therefore, the defendant did not infringe the asserted method claim as a matter of law. Id. at 1330. The court explained:

> Under BMC Resources, the control or direction standard is satisfied *in situations where the law would traditionally hold the accused direct infringer vicariously liable* for the acts committed by another party that are required to complete performance of a claimed method.

Id. (emphasis added). Most importantly, the court noted that the fact that the defendant "controls *access to* its system and instructs bidders on its use is

not sufficient to incur liability for direct infringement." Id. (emphasis added).

2. Global Patent Holdings, LLC v. Panthers BRHC LLC

In Global Patent Holdings, the patent at issue claimed a "method for downloading responsive data from a remote server." Global Patent Holdings, LLC v. Panthers BRHC LLC, 586 F. Supp. 2d 1331, 1333 n.1 (S.D. Fla. 2008), *aff'd*, 318 F. App'x 908 (Fed. Cir. 2009). The plaintiff alleged that the defendant infringed the method claim "by downloading responsive data, including audio/visual and graphical representations, such as JPEG images and/or other compressed data, on its website." Id. The plaintiff alleged that the infringement took place through the joint action of both the defendant and the website user. Id. The plaintiff alleged that the defendant directed and controlled the website user by sending a set of computer programs to the user's computer through the defendant's website. Id. The defendant moved to dismiss the complaint on the grounds that the plaintiff had not alleged that the defendant either performed every step of the claimed method or directed and controlled the user in performing any steps not performed by the defendant. Id.

After discussing the holdings in BMC Res. and Muniauction, the district court granted the defendant's motion to dismiss. Id. at 1334-36. In so doing, the court first noted that the patented method required two parties to

complete all of the method's steps: "a remote computer user, and the website server." Id. at 1335. The court then noted that "the patented method does not begin until a computer user visits Defendant's website. *If no person ever visited Defendant's website, then Plaintiff's patent would never be infringed*." Id. (emphasis added).

The court found that the plaintiff failed to allege sufficient facts to suggest that the defendant directed or controlled the user in visiting the website. Id. The court noted that putting "Javascript programs on the remote user's computer to allow the process to begin" is insufficient to show direction or control. Id. In addition, the plaintiff did not allege that "remote users are contractually bound to visit the website," that "remote users are Defendant's agents who visit the website within the scope of their agency relationship," or any other "facts which would render Defendant otherwise vicariously liable for the acts of the remote user." Id.

The court concluded that, because "the patented process cannot start until the remote user visits Defendant's website[,]" and because "Plaintiff has not alleged that these individuals visit Defendant's website under Defendant's 'direction or control[,]'" the defendant could not be liable for direct patent infringement. Id.

B. Application of *BMC*, *Muniauction*, and *Global Patent Holdings*

Although the Court denied Epic's motion previously, the Muniauction and Global Patent Holdings decisions – which clarified the BMC Res. decision – compel the Court to now grant Epic's motion for summary judgment of noninfringement.

First, this case is factually similar to the situation presented in Global Patent Holdings. Just like the accused method in Global Patent Holdings, the parties in this case agree that the "initiating a communication" step of claim 1 is performed by a patient or other user, not by a healthcare provider. (DSMF ¶ 548; Pl.'s Resp. to DSMF ¶ 548.) In addition, like Global Patent Holdings, the method in MyChart does not begin until a computer user visits Defendant's website. Moreover, the parties do not dispute that MyChart users choose whether or not to initiate a communication with the provider and the user is not under any obligation to initiate a communication. (DSMF ¶¶ 551-554; Pl.'s Resp. to DSMF ¶¶ 551-554; Bysinger Dep. 405:17-406:5.) As in Global Patent Holdings, "[i]f no person ever visited Defendant's website, then Plaintiff's patent would never be infringed." Thus, the fact that MyChart users must initiate the communication in order to begin the patented method is, under Global Patent Holdings, sufficient to defeat a claim

of direct infringement absent evidence that MyChart providers direct and control the user to initiate the communication.

Second, McKesson cannot show that genuine issues of fact remain concerning whether MyChart providers direct and control MyChart users to initiate the communication. McKesson relies on the testimony of two experts to show direction and control by MyChart providers: Dr. Charles Isbell and Dr. Wallace Bysinger. As discussed below, McKesson no longer relies on the testimony of Dr. Isbell on the issue of direction and control. Dr. Bysinger testified as to the following evidence of direction and control by providers:

- providers use login information to restrict patients' access;
- providers require that patients agree to certain terms and conditions in order to use the system;
- providers determine the user's level of access;
- providers require that the patient accept "cookies" in order to use MyChart; and
- patients can only access information provided by the provider or that the provider wants them to see.

(Pl.'s Resp. to DSMF ¶ 555. See also Bysinger Dep. 408:19-412:16.) Dr. Bysinger's testimony shows only that MyChart providers control the users' *access* to MyChart. Dr. Bysinger himself admitted that each of the above facts is evidence of how providers control users' *access* to MyChart. (Bysinger Dep. 408:19-412:16.) In Muniauction, the Federal Circuit found that

controlling access to an online method and instructing users on how to use the method is insufficient evidence of direction and control. Thus, under Muniauction, the evidence offered by McKesson is insufficient to demonstrate the direction and control necessary to establish joint infringement.

C. Conclusion as to Infringement

In summary, Epic's MyChart product requires that a user initiate a communication with a provider before the method begins. McKesson failed to demonstrate that genuine issues of fact remain concerning whether MyChart providers direct and control MyChart users to initiate the communication. Thus, under BMC Res. and its progeny, McKesson cannot demonstrate that any single party *directly* infringes the '898 patent. Moreover, because a party must first show direct infringement in order to succeed on a claim of indirect infringement, McKesson's claims of indirect infringement fail. See Dynacore Holdings Corp. v. U.S. Phillips Corp., 363 F.3d 1263, 1272 (Fed. Cir. 2004) ("Indirect infringement . . . can only arise in the presence of direct infringement[.]").

Although the current state of the law requires that the Court grant Epic's motion for summary judgment, the Court notes that the single entity rule and BMC's interpretation thereof severely limits the protection provided for patents which would otherwise be valid and enforceable. A potential

infringer seeking to take advantage of a patented process could likely avoid infringement simply by designing its otherwise infringing product in a way that allows customers to decide initially whether to access it. See generally Joshua P. Larsen, Liability for Divided Performance of Process Claims After BMC Resources, Inc. v. Paymentech, L.P., 19 DePaul J. Art, Tech. & Intell. Prop. L 41 (2008). As long as the sale of a product constitutes an arms length transaction between the customer and the infringing company, which is insufficient to create vicarious liability, the patent holder would likely have no redress against the infringer. Id. This result weakens the policy of providing protection to those who devote the time and resources to develop otherwise novel and patentable methods.

IV. Plaintiff's Motion to Strike [#313]

Epic also moved to strike the declaration of Dr. Charles Isbell, which McKesson relies on to argue that MyChart providers exercise direction and control over MyChart users. McKesson first filed Dr. Isbell's declaration in response to Epic's original motion for summary judgment of non-infringement. The Court relied in part on Dr. Isbell's declaration in denying Epic's initial motion for summary judgment. (See Order, May 16, 2008 at 7-9.) McKesson concedes that the declaration it now relies on in opposition to Epic's current motion for summary judgment is the same declaration it relied

on in response to Epic's first motion for summary judgment. (See Pl.'s Resp. to Def.'s Mot. to Strike [#385] at 5.) For the following reasons, the Court grants Epic's motion and strikes Dr. Isbell's declaration.

First, at Dr. Isbell's deposition, McKesson stated that it would no longer rely on Dr. Isbell's testimony or declaration on the issue of direction or control. The following exchange took place at Dr. Isbell's deposition between counsel for Epic and counsel for McKesson:

Epic's Counsel:	[I]s Dr. Isbell going to give any further opinions on the direction and control issue, or do you intend to use his declaration that you filed on summary judgment any further in this case? Because I've got questions on that –
McKesson's Counsel:	We are not – if it's not in his report, he's not going to be talking about it.
Epic's Counsel:	Okay.
McKesson's Counsel:	And specifically, if you're going to the direction or control issue of his declaration, the answer is no.
Epic's Counsel:	So you won't – let me just be clear. You're not going to have him offer an opinion on the initiating communication, direction and control thing?
McKesson's Counsel:	No.
Epic's Counsel:	Nor are you going to ever use again in this case the declaration you submitted in opposition of the summary judgment motion?

McKesson's Counsel: That's correct.

Epic's Counsel: I can skip some questions if that's the case, and I appreciate that. All right.

(Isbell Dep. 179:11-180:11.) Relying on McKesson's representation that they would no longer use Dr. Isbell's declaration on the direction or control issue, Epic did not question Dr. Isbell on that issue.

In addition, Dr. Isbell did not address the direction or control issue in the expert reports he submitted in this case. Thus, Dr. Isbell will not be permitted to testify at trial concerning the direction or control issue. See Fed. R. Civ. P. 26(a)(2), 37(c)(1). In fact, McKesson admitted that it "did not and does not intend to request that Dr. Isbell provide any testimony at trial on the 'direction or control' issue . . . ." (See Pl.'s Resp. to Def.'s Mot. to Strike [#385] at 7.) Because Dr. Isbell cannot testify at trial on the issue of direction or control, McKesson cannot rely on Dr. Isbell's declaration to defeat summary judgment. Therefore, the Court **GRANTS** Epic's motion to strike the portions of Dr. Isbell's declaration directed to the direction or control issue.

V. Conclusion

For the foregoing reasons, the Court **GRANTS in part** Defendant's motion for summary judgment [#314] with respect to Plaintiff's claims of infringement. The Court also **GRANTS** Defendant's motion to strike Dr. Isbell's declaration [#378] and **DENIES** Defendant's motion for a status

conference regarding potential trial dates [#346]. The Court **DIRECTS** the parties to address within five (5) days of the entry of this Order, in writing and not to exceed ten (10) pages, whether it is necessary for the Court to address the remaining portions of the parties' respective motions for summary judgment.

SO ORDERED, this 6th day of September, 2009.

JACK T. CAMP
UNITED STATES DISTRICT JUDGE

US006757898B1

(12) **United States Patent**
Ilsen et al.

(10) **Patent No.: US 6,757,898 B1**
(45) **Date of Patent: Jun. 29, 2004**

(54) **ELECTRONIC PROVIDER—PATIENT INTERFACE SYSTEM**

(75) Inventors: **Kevin Ilsen**, Lowell, MA (US); **Michael J. Cataldo**, Hingham, MA (US)

(73) Assignee: **McKesson Information Solutions, Inc.**, Alpharetta, GA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/484,550**

(22) Filed: **Jan. 18, 2000**

(51) **Int. Cl.**[7] **G06F 15/16**; A61B 5/00
(52) **U.S. Cl.** **718/203**; 600/300
(58) **Field of Search** 709/203, 100–109; 707/1–199; 600/300

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Primary Examiner—John Follansbee
Assistant Examiner—Kenneth Tang
(74) *Attorney, Agent, or Firm*—Evelyn H. McConathy; Dilworth Paxson LLP

(57) **ABSTRACT**

The present invention provides a communication system for providing automated, electronic communications between at least one health-care provider and a plurality of users of the health-care provider, wherein the communications occur over a communications network through a provider/patient interface, said system comprising:

a central server, comprising one server or a logic unit of multiple servers;

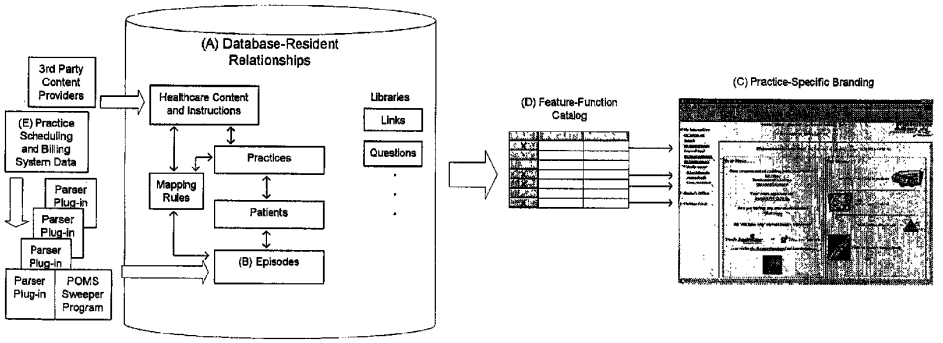
a provider's service computer,

a plurality of users' computers; and

a communication network for enabling communication between and among the central server, the provider's service computer, and the plurality of users' computers. In a preferred embodiment, the communication system of the present invention is the Electronic Provider-Patient Interface (the ePPi™). The preferred users of the ePPi system are patients, and the preferred provider is the patient's own doctor or health-care practitioner. At the core of the present invention is a fully automated mechanism for generating a personalized area (patient page) for each user within the doctor's or health-care group's Web site in the ePPi system, and for introducing provider-based content to the system in standardized formats, such as standard administrative and billing codes. Thus, the ePPi system, provides an automated service to patients, through which access to their own doctor is provided over the Internet without additional work for the doctor's office. Moreover, the ePPi system offers patients access to a variety of practice-based services including, appointment requests and updates, prescription refills, online triage, health search information and the like.

18 Claims, 12 Drawing Sheets

ePPi Core Functional Architecture



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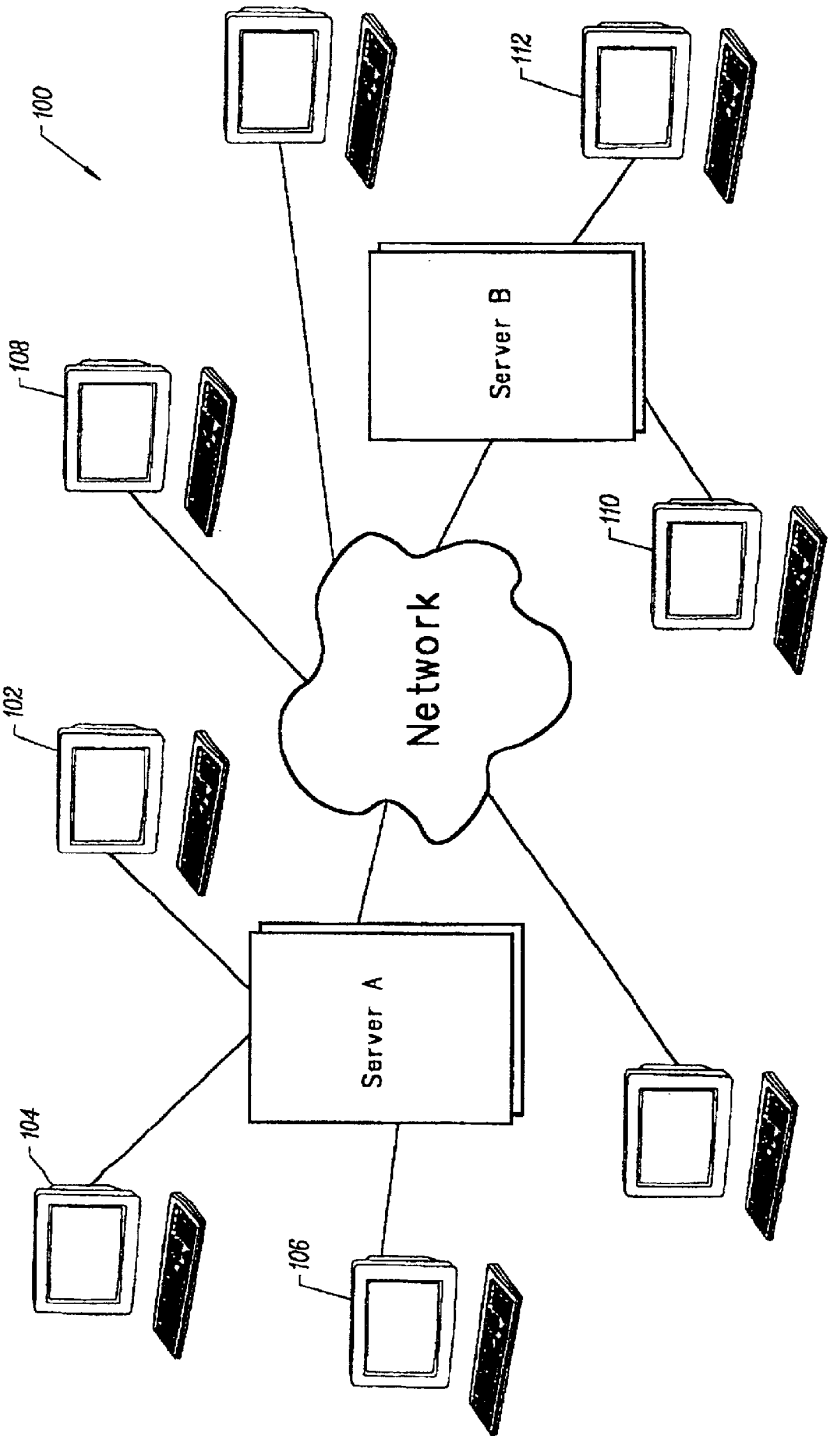


FIG. 1

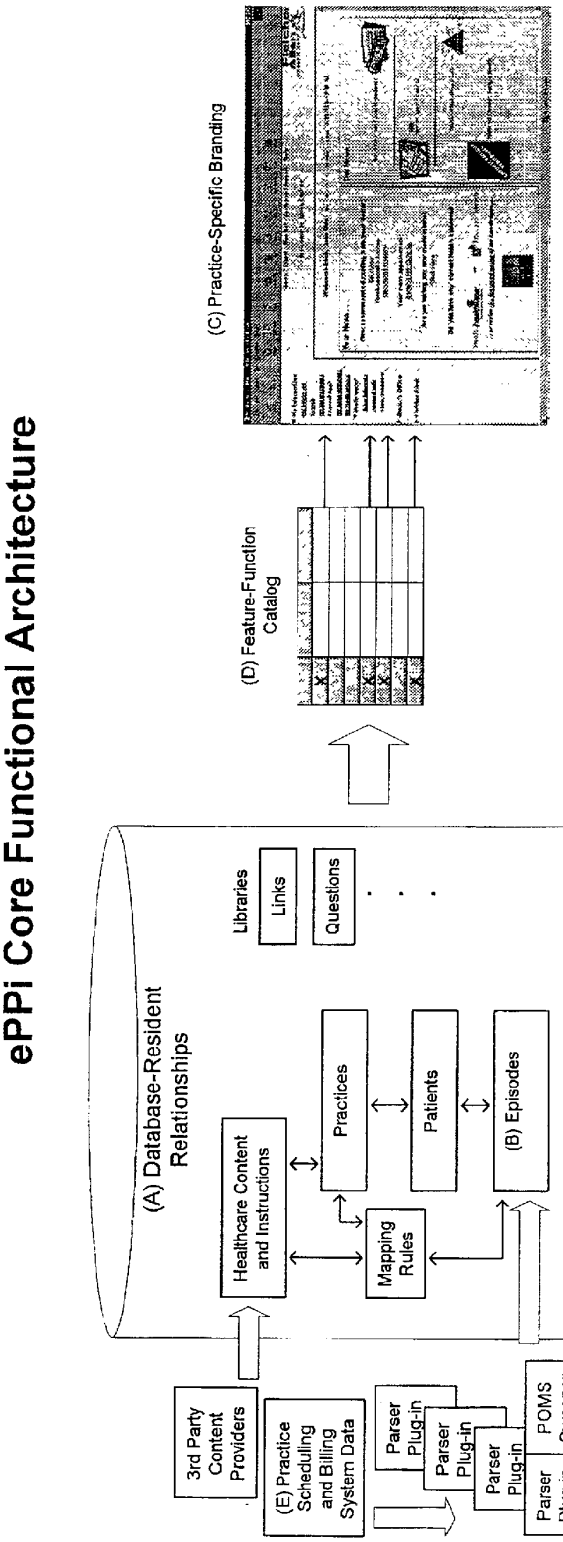

ePPi Core Functional Architecture
(C) Practice-Specific Branding
(D) Feature-Function Catalog
(A) Database-Resident Relationships
Libraries
Links
Questions
Healthcare Content and Instructions
Practices
Patients
(B) Episodes
Mapping Rules
3rd Party Content Providers
(E) Practice Scheduling and Billing System Data
Parser Plug-in
Parser Plug-in
Parser Plug-in
Parser Plug-in
POMS Sweeper Program

FIG. 2

ePPi
Service
Center
PATIENT VIEW
Medication information
Personalized health topics
Appointment / Refill requests
Pre- / post- visit instructions
Practice overview, news, hot topics
Provider directories
Maps and directions
PRACTICE VIEW
Targeted broadcast notices
Appointment requests
Refill requests
Patient demographics
Patient medical history
Patient self-care tracking
Usage statistics

FIG. 3

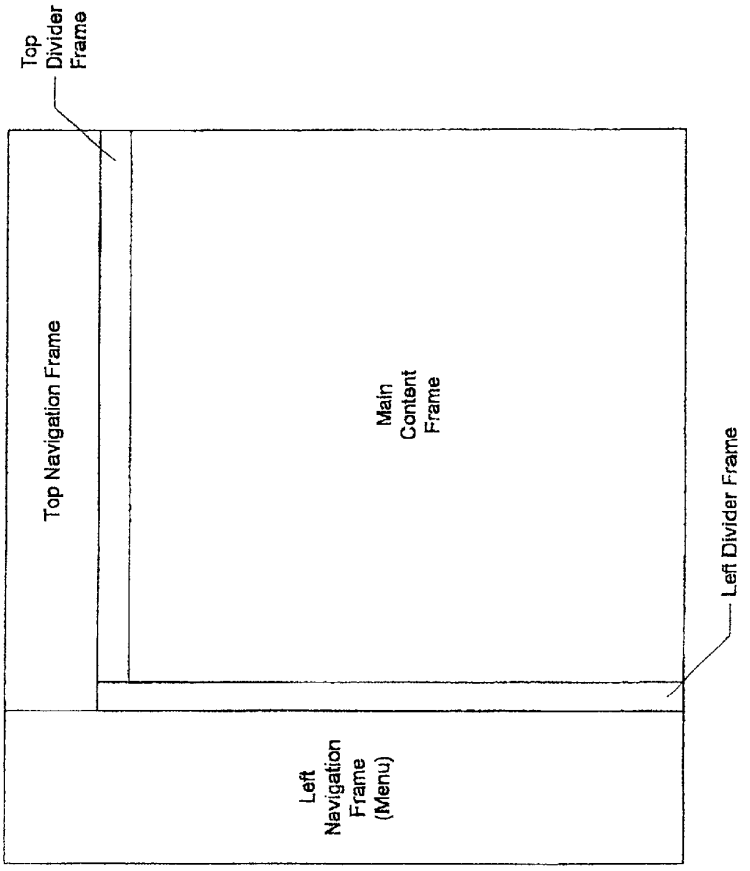

ePPi Patient View
Screen Layout Using Frames
Top
Divider
Frame
Top Navigation Frame
Main
Content
Frame
Left Divider Frame
Left
Navigation
Frame
(Menu)

FIG. 4

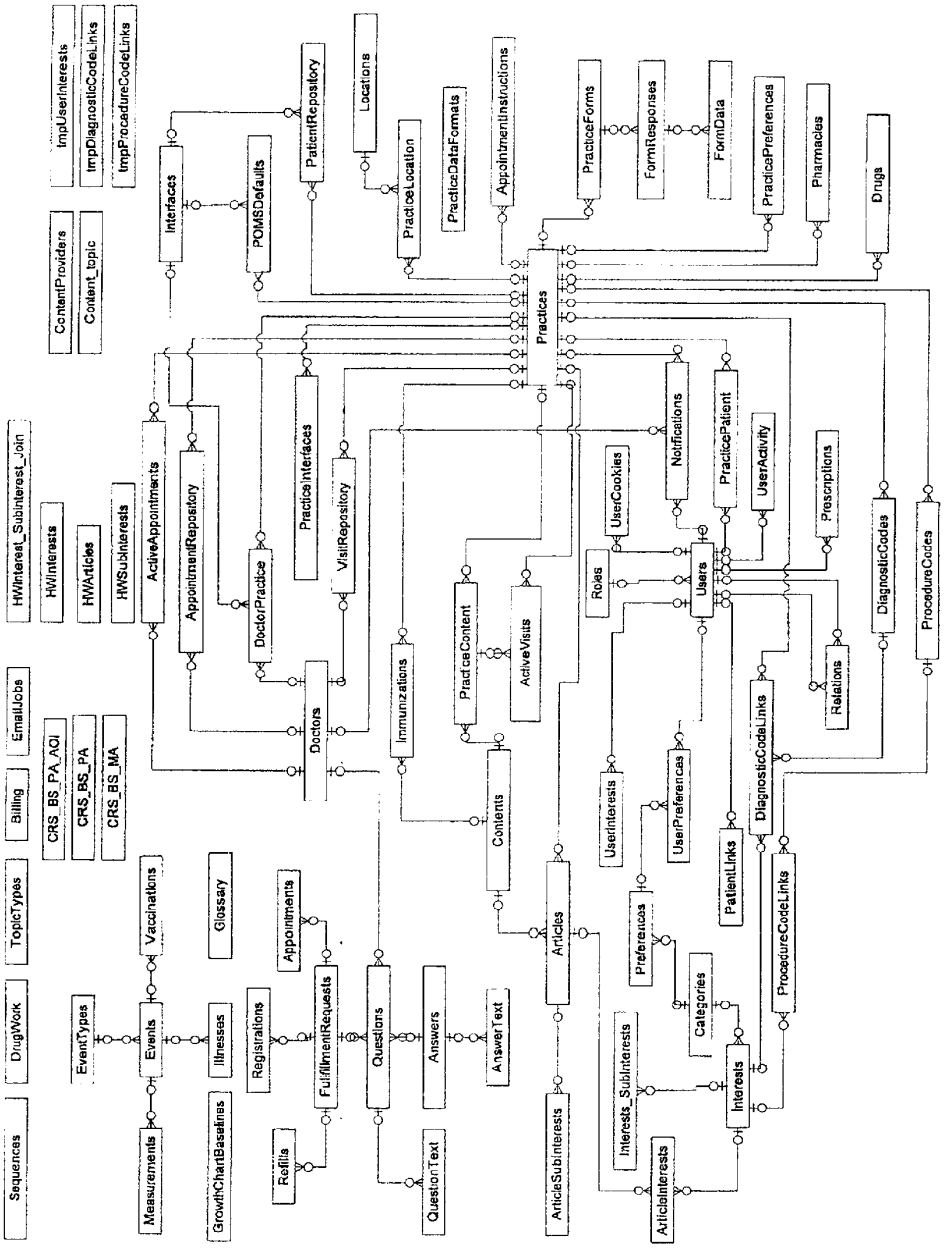

ImpUserInterests
ImpDiagnosticCodeLinks
ImpProcedureCodeLinks
ContentProviders
Content_topic
HWInterest_SubInterest_Join
HWInterests
HWArticles
HWSubInterests
CRS_BS_PA_AQI
CRS_BS_PA
CRS_BS_MA
EmailJobs
Billing
TopicTypes
DrugWork
Sequences
EventTypes
Events
Vaccinations
Measurements
Illnesses
Glossary
GrowthChartBaselines
Registrations
Refills
Appointments
FulfillmentRequests
Questions
QuestionText
Answers
AnswerText
Contents
Articles
ArticleSubInterests
ArticleInterests
Interests_SubInterests
Interests
Categories
Preferences
UserInterests
UserPreferences
PatientLinks
DiagnosticCodeLinks
ProcedureCodeLinks
Immunizations
PracticeContent
ActiveVisits
Doctors
DoctorPractice
PracticeInterfaces
VisitRepository
AppointmentRepository
ActiveAppointments
Interfaces
POMSDefaults
PatientRepository
Locations
PracticeLocation
PracticeDataFormats
AppointmentInstructions
Practices
Roles
UserCookies
Users
Notifications
PracticePatient
UserActivity
Prescriptions
Relations
DiagnosticCodes
ProcedureCodes
PracticeForms
FormResponses
FormData
PracticePreferences
Pharmacies
Drugs

FIG. 5

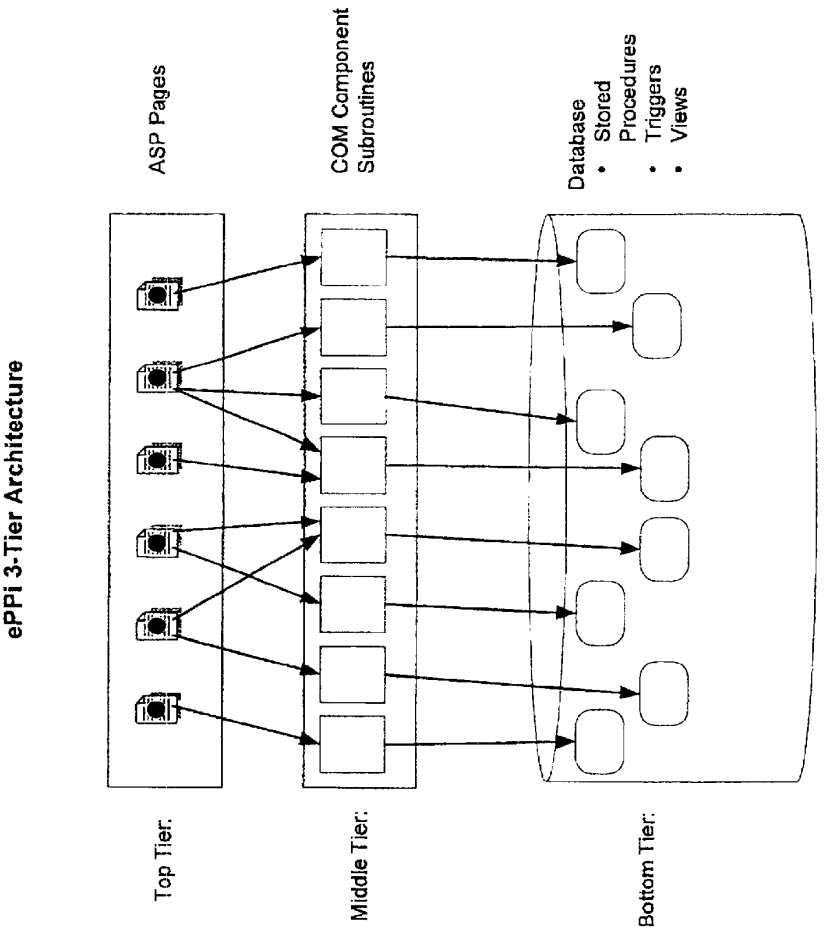

ePPi 3-Tier Architecture
ASP Pages
COM Component Subroutines
Database
• Stored Procedures
• Triggers
• Views
Top Tier:
Middle Tier:
Bottom Tier:

FIG. 6

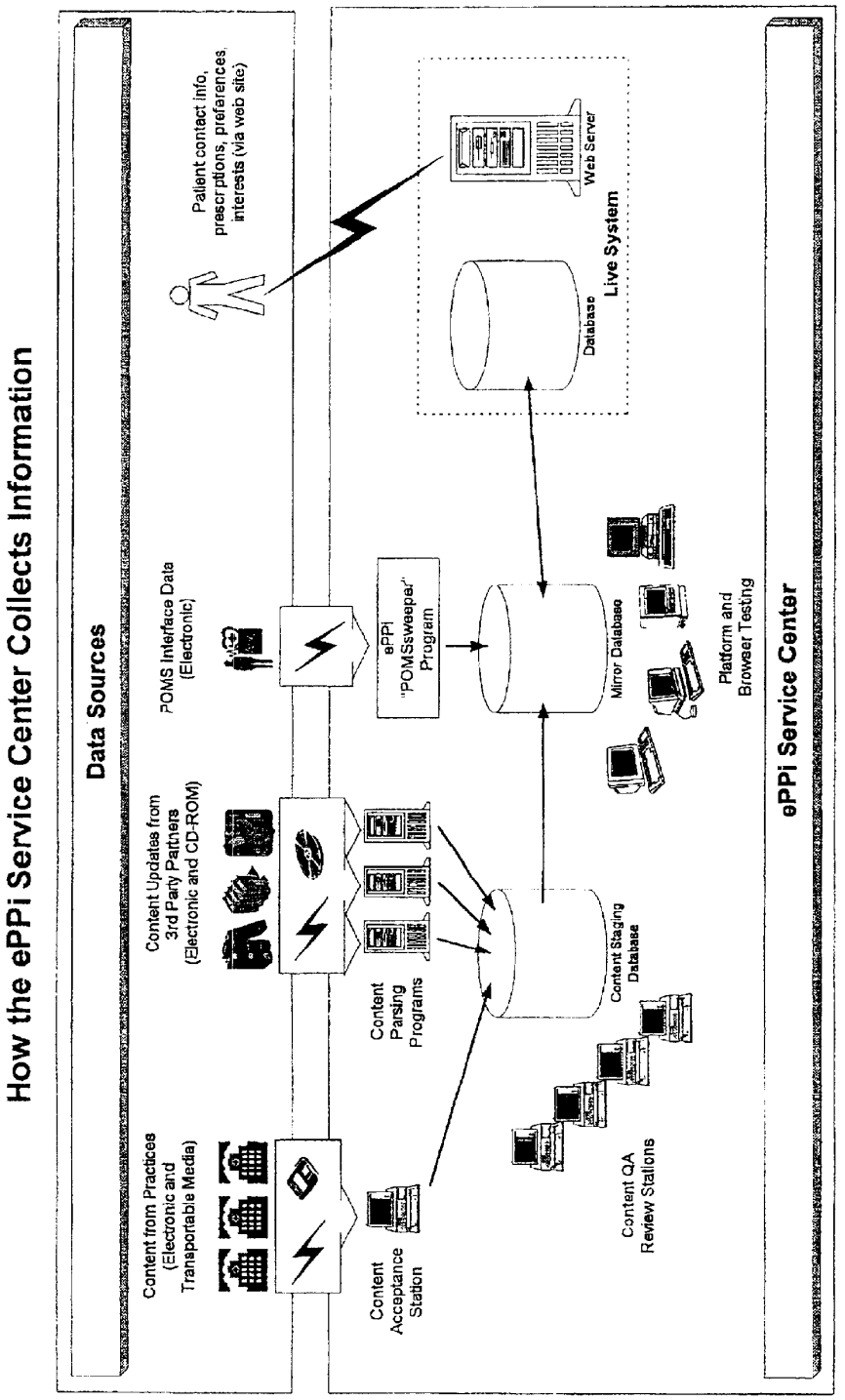
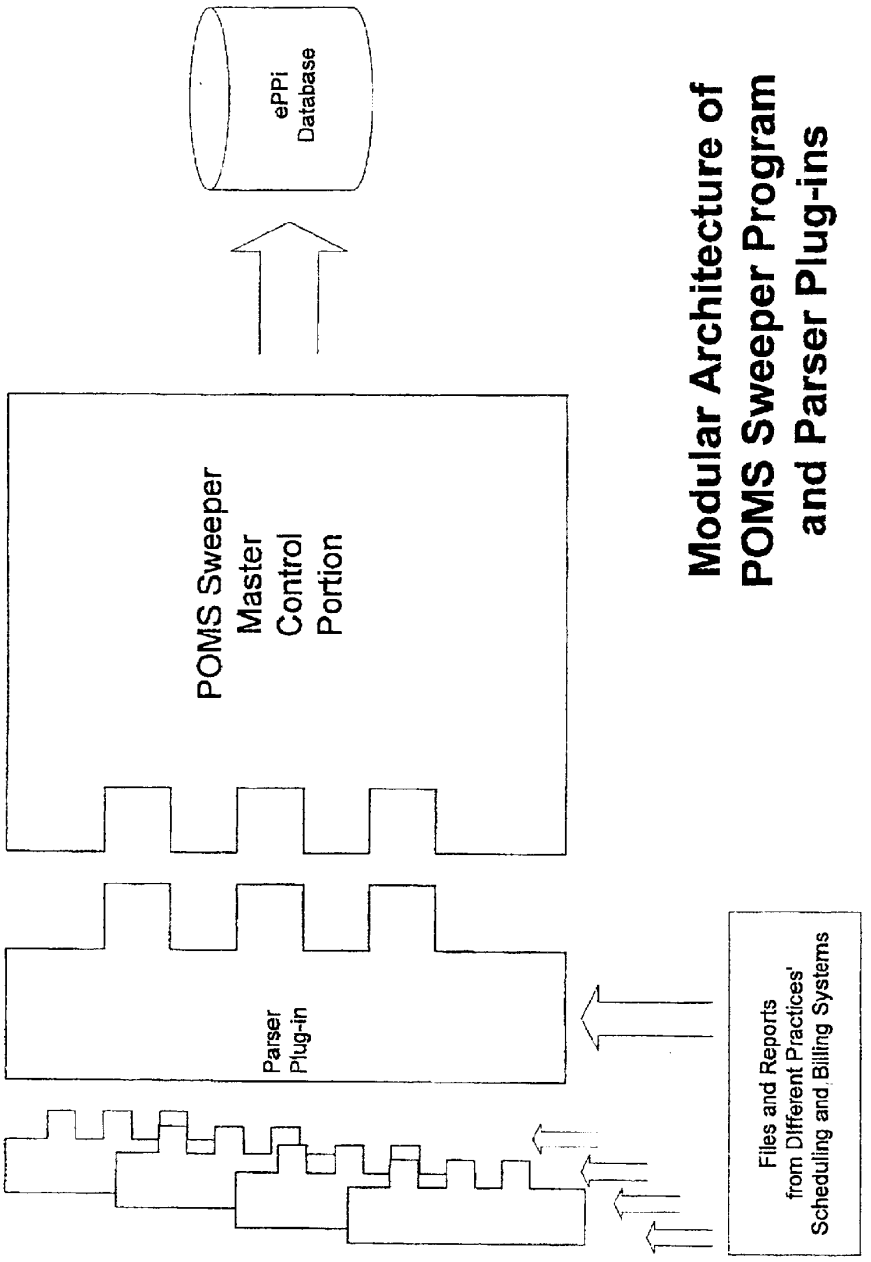

How the ePPi Service Center Collects Information
Data Sources
Content from Practices (Electronic and Transportable Media)
Content Updates from 3rd Party Partners (Electronic and CD-ROM)
POMS Interface Data (Electronic)
Patient contact info, prescriptions, preferences, interests (via web site)
Content Acceptance Station
Content Parsing Programs
ePPi "POMSweeper" Program
Content Staging Database
Content QA Review Stations
Mirror Database
Platform and Browser Testing
Live System
Database
Web Server
ePPi Service Center

FIG. 7



Modular Architecture of POMS Sweeper Program and Parser Plug-ins

FIG. 8

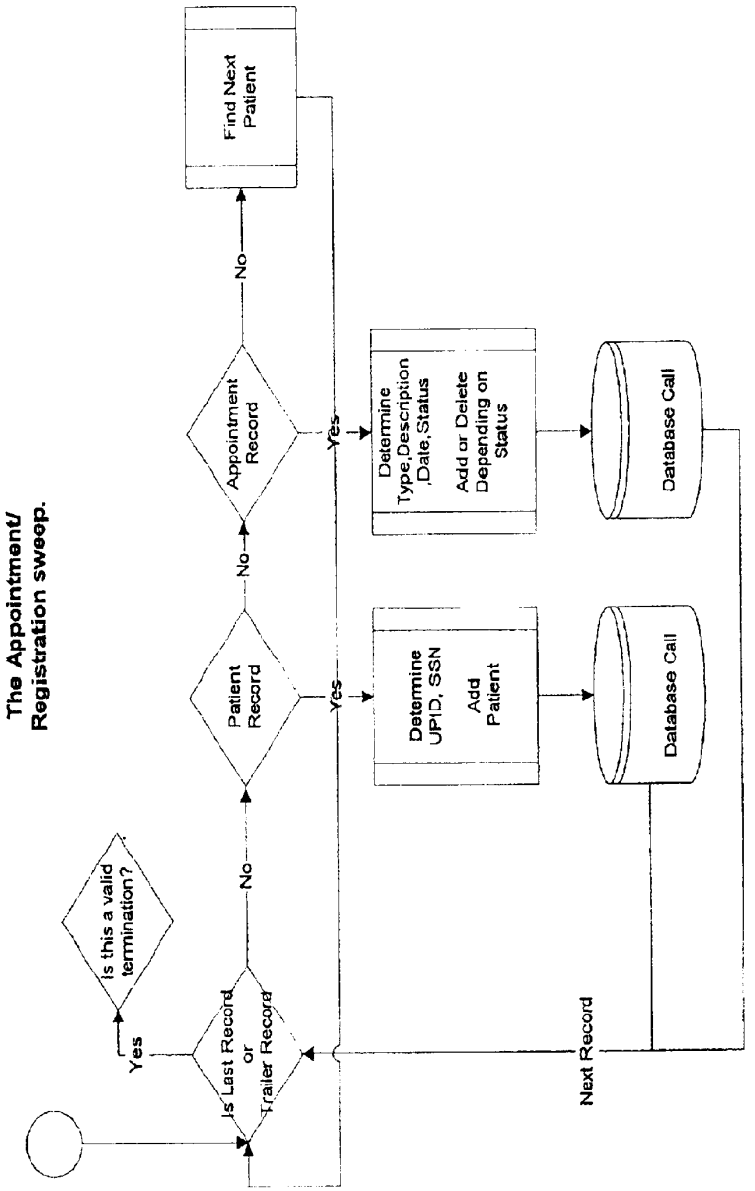

The Appointment/
Registration sweep.
Is this a valid termination?
Yes
Is Last Record or Trailer Record
No
Patient Record
No
Yes
Determine UPID, SSN
Add Patient
Database Call
Appointment Record
No
Yes
Determine Type,Description ,Date,Status
Add or Delete Depending on Status
Database Call
Find Next Patient
Next Record

FIG. 9

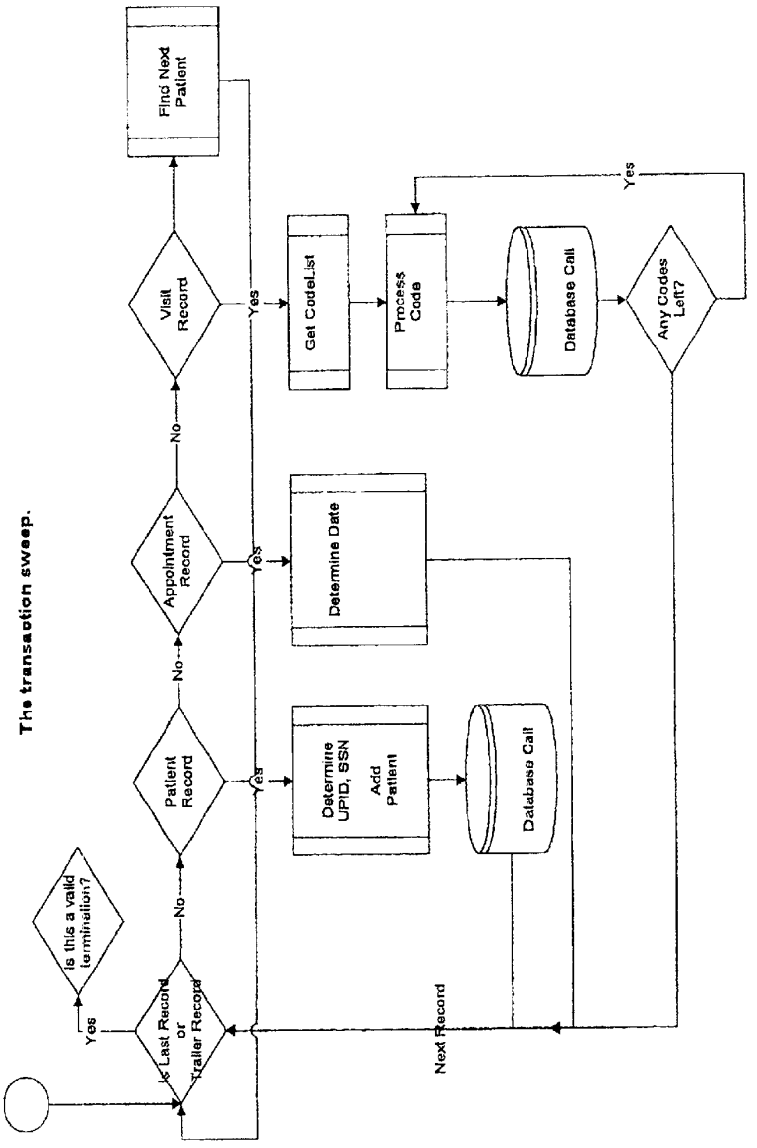

The transaction sweep.
Is this a valid termination?
Yes
Is Last Record or Trailer Record
No
Patient Record
Yes
Determine UPID, SSN
Add Patient
Database Call
No
Appointment Record
Yes
Determine Date
No
Visit Record
Yes
Get CodeList
Process Code
Database Call
Any Codes Left?
Yes
Find Next Patient
Next Record

FIG. 10

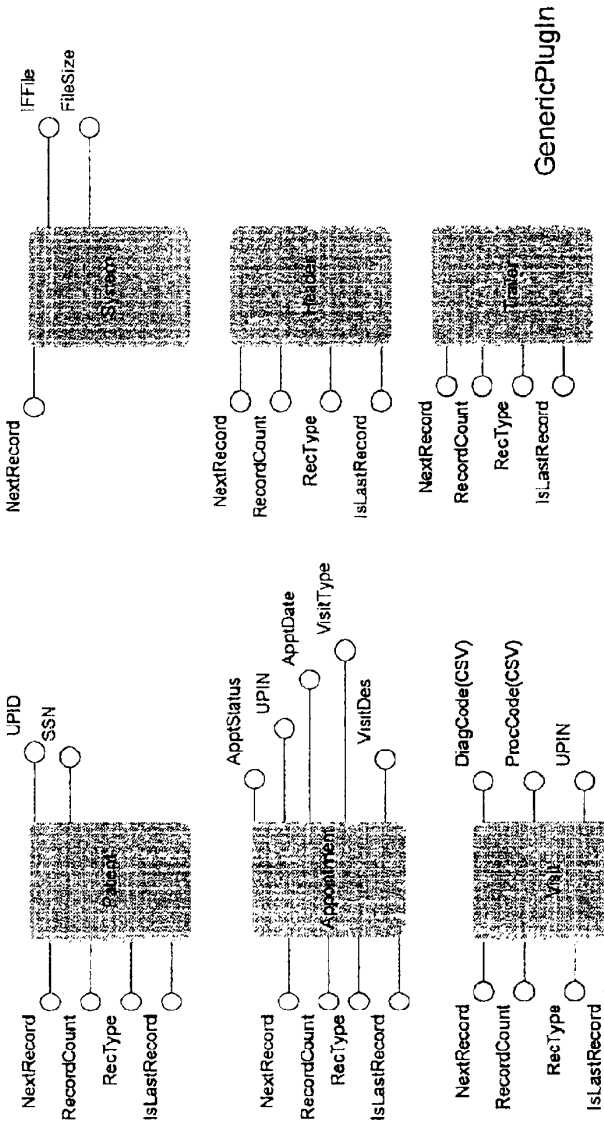

GenericPlugIn
IFFile
FileSize
NextRecord
RecordCount
RecType
IsLastRecord
UPID
SSN
ApptStatus
UPIN
ApptDate
VisitType
VisitDes
DiagCode(CSV)
ProcCode(CSV)
UPIN

FIG. 11

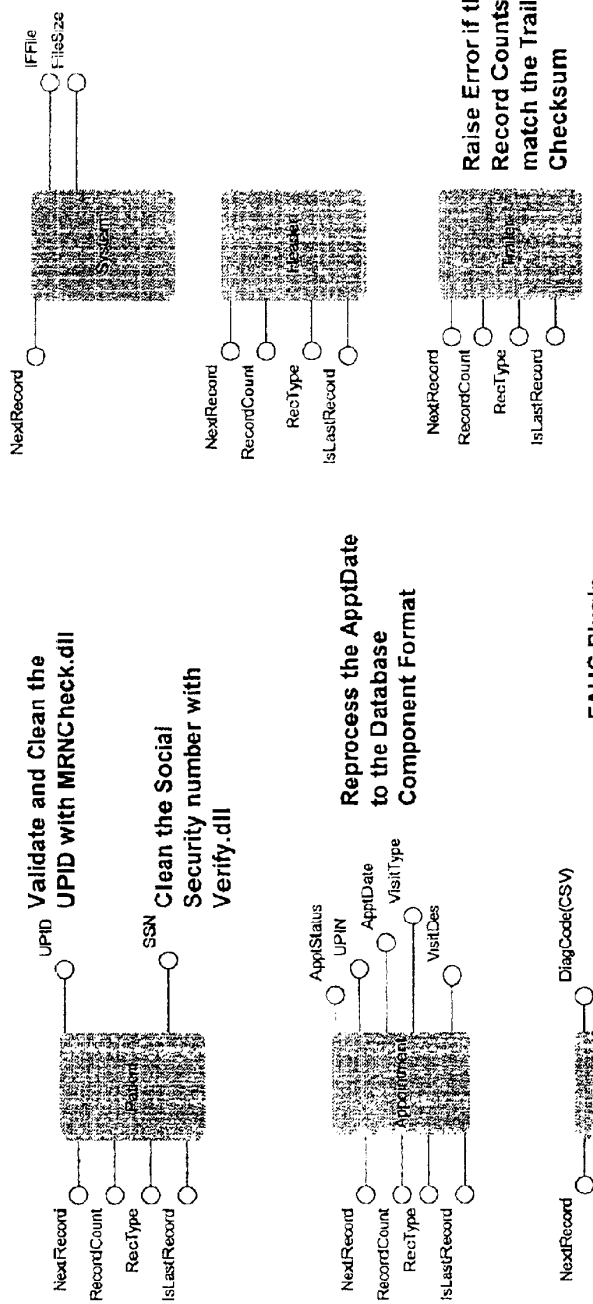

IFFile
FileSize
NextRecord
RecordCount
RecType
IsLastRecord
Raise Error if the Record Counts do not match the Trailer Checksum
Validate and Clean the UPID with MRNCheck.dll
UPID
SSN
Clean the Social Security number with Verify.dll
Reprocess the ApptDate to the Database Component Format
ApptStatus
UPIN
ApptDate
VisitType
VisitDes
FAHC PlugIn
DiagCode(CSV)
ProcCode(CSV)

FIG. 12

ELECTRONIC PROVIDER— PATIENT INTERFACE SYSTEM

FIELD OF THE INVENTION

The present invention relates, in general, to an automated system of electronic communications between a health-care or medical service provider and his/her patient, for the purpose of providing a simple, reliable and effective interface for rapidly exchanging inquiries, responses, data, services and information between the both parties for the mutual benefit and satisfaction of each.

BACKGROUND OF THE INVENTION

Health care used to be simple and reliable. When symptoms of an illness appeared, either the doctor visited the patient's home or the patient went to the doctor's office. But such services no longer exist. Home care by doctors stopped decades ago, and even visits to the doctor's office or hospital must now be preceded by authorization from a managed health care provider. Under certain conditions, care may now be refused entirely unless payment is made in advance. Consequently, consumers have, by necessity, become more active in managing their own health, and they worry about how much they must spend on health-care services.

Meanwhile, health-care providers are now under more pressure than ever to treat a greater number of patients in the same amount of time, but with diminishing resources. The pressure began in the 1980's with the advent of managed health care and the associated reduction in physician compensation in the face of an inflated economy. This trend continued through the 1990's, but was exacerbated by patient demands for an increased voice in their care, better access to the doctor and more information about their medical situation. As a result of cost cutting, merging and reengineering, doctors have been left with the dilemma of either reducing service to their patients or increasing capacity. The effect has been a mutual disenfranchisement of both doctors and patients. This is evidenced by the increasing number of doctors, who are now leaving medicine to pursue other careers, and by the fact that the ones remaining are considering resorting to labor unions to protect their interests.

A number of commercial entities have attempted to assist doctors by creating "back-office" operations and management solutions. Back office solutions are defined as those processes applied to the current day-to-day management of a doctor's practice (i.e., eligibility, claims, on-line practice management, etc.). However, they do not address the doctor's relationship with the patient. Unfortunately, implementation of a back-office service has a high impact on the practice, because it requires a significant addition of resources and necessitates system and process modifications in the doctor's office, including substantial training of staff, integration and work process changes. Therefore, the back-office approach is tied to what have proven to be insurmountable problems involving additional time, cost and management expenditures for the practice.

Companies that sell in-house systems for the back-office space, include medical record vendors, such as Medicalogic and Epic, as well as practice office management vendors (POMS), such as IDX. Recently, such vendors have been redeveloping their burdensome back-office solutions to deliver them on-line and compete in the space currently occupied by Healtheon/WebMD. Nevertheless, whether delivered on-line or in-house, each of these solutions has a high impact on the operation of the doctor's office, and as a result will face significant hurdles before they can be adopted regardless of cost, delivery method or the like.

At the same time we now live in an age of information and technology. The Internet provides a number of services to its users, including the World Wide Web (WWW), which is essentially a collection of files, often referred to as Web pages, in a variety of formats stored on host computers, often called Web servers. A collection of Web pages published by an organization is typically termed a Web site, wherein its first or highest level page is termed a "homepage." Consequently, Internet technology has spawned a health-care industry online to provide health-care information to both patients and professionals, and for any number of reasons, individuals are turning to the Internet with increasing frequency for expertise regarding diseases, medicines, treatments, alternative health products, and even the selection of doctors.

To provide greater access to the Internet the communication protocols and languages utilized by users and servers have become standardized. These protocols include (i) the Hyper-Text Transfer Protocol (HTTP), which is an application-level protocol for distributed, collaborative, hypermedia information systems, and the communication protocol used for communications between users and servers, and (ii) the Transfer Control Protocol/Internet Protocol (TCP/IP), wherein the TCP portion is the standard Internet transport specific protocol (or set of protocols) for communication and data exchange between computers or applications. TCP/IP handles issues such as packetization, packet addressing, handshaking and error correction. Also standardized is the language in which users (the patient or consumer seeking information) and servers (the information service providers) communicate, which is called the Hyper-Text Markup Language (HTML).

Although most Web pages are textual documents described in HTML, the pages may also include images, still or moving, and audio data. The key feature of HTML is the ability to define Hypertext Links within the document, which provide access points to other parts of the same document, other Web pages or other Internet facilities.

To access the World Wide Web, the user employs software on his/her computer known as a Web "browser." Commercially available browsers include, for example, Netscape Navigator™ and Microsoft Internet Explorer™. The browser provides an interface, a local cache, and a set of processes for accessing the Internet, navigating over the myriad sites, communicating with a selected site, including E-mail, error detection and correction, and security facilities.

HTTP messages consist of either requests from user to server or responses from server to user. The user enters the address (Uniform Resource Locator (URL)) of a Web page into his/her browser, or selects one from a list of previously stored addresses, often referred to as Bookmarks. The URL is a descriptor that specifically defines a type of Internet resource and its location, i.e., the address of the Web server holding that Web page, which has an address beginning "HTTP://". Access to most Web pages is unrestricted; however, it is possible for access to be controlled by the use of passwords and security restrictions

After the Web page address is entered, the Web browser automatically contacts the user's service provider, dialing up a link over the telephone network if necessary, and issues a request for that Web page. The Web browser then sends an HTTP request to the Web server, which responds to the

HTTP request by sending the requested HTTP object to the user. In most cases, the HTTP object is a plain text (ASCII) document that is written in HTML language, which the Web browser displays on the user's computer screen. The HTML document contains all of the information needed by the browser for displaying a Web page on the user's computer. Typically, the document contains "hyperlinks" that the user can click; doing so causes the Web browser to send a request to the Web server for one or more additional documents. The part of the link displayed to the user is generally distinguished from other parts of the page, for example text may be underlined or in a different color.

Generally the user's computer relies upon a mouse (or trackball) and an on-screen pointer for inputting commands. For example, the pointer is often arranged to change shape or color when located over a hypertext link. When the user selects a hypertext link, usually by positioning the pointer over it and clicking a mouse button, the Web Browser software automatically accesses the corresponding Web page.

The Web browser also evaluates the HTML data to determine if there are any embedded hyper-link statements, which would require subsequent browser requests, which would then be initiated by the browser. The functions of browsers and server software, examples of HTML-coded documents, and the use of links and similar HTTP protocol constructs are described by, e.g., Judson, U.S. Pat. No. 5,572,643, issued in 1996.

Thus, the Internet has become a convenient and powerful tool for many consumers seeking information about a variety of topics, including healthcare, particularly as it becomes increasingly difficult to get service from medical personnel. However, reliance on the Internet for such crucial information could prove hazardous to a patient's health. While there are many legitimate and valuable consumer health portals and health-care sites on-line, such as drKoop.com, Intellihealth.com and AmericasDoctor.com, as well as those by recognized groups, such as the American Diabetes Association, medical professionals, government officials and consumer advocates have recently expressed grave concerns that information from such reputable sites might be misunderstood by consumers. Moreover, less than reputable sites exist that have misled patients by making deceptive claims of miracle cures and bogus breakthroughs.

Patients have, however, expressed concerns and reservations because the information on the Internet is not delivered from "a trusted source," so that even after hours of searching, the patient may not be sure that he has gotten the "right" information. Given the option, patients still consider their personal physician to be the most reliable source of health-care information. Consequently, it is not unusual for the patient to collect a wealth of information from the Internet, and then take it to his/her doctor for validation, which either the doctor will refuse to do, or which will exacerbate the doctor's ever increasing time constraints. Therefore, even in this age of information there remains a significant need for effective and reliable communication between patients and their doctors, so that (i) the patient is not left to rely on information of unknown accuracy from arbitrary service providers on the Internet, (ii), trust in medical practitioners and service to the patient can be restored, and (iii) billing, scheduling and administrative functions are efficiently facilitated for both parties. Moreover, there remains a need in society for restoring communications between doctors and their patients, for enhancing service to patients, and for expanding the capacity of the medical practice, without additional work by the doctor or his/her staff.

SUMMARY OF THE INVENTION

Recognizing the endemic and chronic lack of adequate communication between health-care providers and their patients, the present invention provides a communication system for providing automated, electronic communications between at least one health-care provider and a plurality of users of the health-care provider, wherein the communications occur over a communications network through a provider/patient interface, said system comprising:

- a central server, comprising one server or a logical unit of multiple servers;
- a provider's service computer,
- a plurality of users' computers; and
- a communication network for enabling communication between and among the central server, the provider's service computer, and the plurality of users' computers. In a preferred embodiment, the communication system of the present invention is the first Electronic Provider-Patient Interface (the ePPi™). The preferred users of the ePPi system are patients, and the preferred provider is the patient's own doctor or health-care practitioner ("the practice").

The ePPi system addresses one of the patient's primary concerns—access to information and services from their own doctor. The ePPi system, provides an automated service to patients, through which access to their own doctor is provided over the Internet without additional work for the doctor's office because it is based upon existing records. Prior to this invention, patients were frustrated by their inability to gain access to their doctors, while doctors were equally frustrated because there simply was not enough time for them to provide the service they would have liked to their patients. Health-care providers realized that they had to find a way to increase capacity without sacrificing quality, service or patient access; but without increasing cost. The ePPi system offers an automated and efficient provider-patient communication system that resolves both the patient's and the provider's aggravation by providing appropriate health-care information and services.

At the core of the present invention is a fully automated mechanism for generating a personalized area (patient pages) for each patient within the doctor's or health-care group's Web site in the ePPi system. Custom mappings are established in the ePPi system between the practice's common visit codes, diagnoses codes and procedure codes, thereby permitting automatic delivery of content to the patient through the logic of the system. Thus, the patient's page is created without extra work or effort by the practice through an automated process that uses the data that has already been entered into the practitioner's scheduling and billing systems. As a result, once the patient has logged into his/her own Web page, he/she can also access a variety of practice-based services including, appointment requests and updates, prescription refills, online triage, health search information and the like.

Based upon the previously entered content from the practice about the patient, and the coded information added to the system following each additional visit, diagnosis or procedure in the patient's history (all of which contribute to determining the content of the patient's page), visit-specific content is made available on-line to the patient after a visit to the practice. This offers the patient significantly more information than he/she could have absorbed during a typical visit with the physician. Patient inquiries or requests regarding episodic events, such as appointment and prescription refill requests, can be submitted at the convenience

of the patient, and can then be handled by the doctor's staff much more efficiently; both in terms of time and flexibility, than ever before possible.

Moreover, the ePPi system is a powerful patient relationship management tool in the doctor's front-office practice. Patients can become increasingly involved in their own care, and less dependent on physician office resources. For the medical practice, this translates into reduced cost, increased capacity and increased customer satisfaction. For the patients, the effect is not only enhanced savings and satisfaction, but the on-line information is now available from their own doctors, rather than from unreliable sources on the Internet. In addition, the system captures unique data that is of significant interest to researchers and suppliers of health-care products, which can be utilized to affect patient behavior (e.g., compliance), product development and marketing, on-line sales and advertisement.

The ePPi implementation collectively embodies a set of one or more server computers, which perform various tasks. These computers may or may not necessarily be co-located in a single facility. Regardless of their physical location, they comprise a logical unit, working in concert to provide the ePPi functionality. The functional components provided in the communication system of the present invention include:

- a Web server capable of responding to HTTP requests from users by sending HTML formatted documents to those users;
- a database server capable of maintaining complex relationships between practices, patients, doctors, and healthcare informational content;
- a modular data collection program that receives information from doctors' or practitioners' scheduling and billing systems regarding patient visits, in a variety of different data and file formats, reformats the information, and stores it in the database;
- an electronic mailing capability which supports the automated transmission of notifications to patients when new information is added to the database, as well as the transmission of notifications to practice-designated personnel whenever new requests from patients are made (e.g., appointment scheduling requests, prescription renewal requests, non-urgent questions for a doctor, etc.).

The communication system of the present invention provides a system, wherein there are one or more providers, each of which is in communication with a plurality of users. Additional component servers can be added to the system as new functionality is introduced or additional capacity is needed. Furthermore, the architecture has been designed with maximum flexibility in mind, so that the ePPi Service Center may be scaled appropriately to the needs of the users. Thus, it may be required to have more Web servers and fewer database servers, or more database servers and fewer Web servers. A single computer could host only one functional component, or a combination.

As the system and database are updated, refined or modified, additional features will be introduced. For example, the present invention further offers the ability to evaluate prescribed medications, in the event that a particular drug is not available, or that an equivalent generic drug may cost substantially less. Nevertheless, the system will remain unique to each individual client since criteria that are of interest to one patient may be of no interest to another. In the preferred embodiment of the present invention, the server uses a hypertext transfer protocol ("HTTP") to communicate over the network with either providers or users; such providers and users also communicate with the server using the hypertext transfer protocol. The server typically includes at least one server processor, a memory and a computer readable medium, such as a magnetic ("hard disk") or optical mass storage device, and the computer readable medium of the server contains computer program instructions for transmitting the file from the server system to the providers" or user's system and for transmitting static or dynamic objects to the provider's or user's system, respectively. The provider or user typically will utilize a processor and a memory and a computer readable medium, such as a magnetic or optical mass storage device, and the computer readable medium of the provider or user contains the computer program instructions for receiving and storing static, dynamic or mixed objects at the provider's or user's computer. The static object, in a typical embodiment, will include a name attribute, such as a domain attribute.

The present invention further provides a communication system, wherein the communication network is either an Internet or intranet network. The preferred communication network is the Internet.

The preferred communication system of the present invention comprises a provider-patient interface Service Center, wherein custom content is dynamically assembled and delivered. Moreover, delivery in the preferred system occurs over the World Wide Web, and custom content is preferably assembled using Active Server Pages (ASP) technology. Custom content is preferably selected from a library of information, and the selection is based upon specific data received from the provider about each user, who is served by the provider. The data about each user comprises information about each user's visits to the provider. Further, the custom content selection in the preferred communications system is based upon logical mappings that reside in the relational database server.

The present invention also provides a communication system comprising a unique provider's Web site for each of the one or more providers, wherein each Web site is supported by or in communication with the central server through the Service Center. Moreover in the preferred communication system, the provider/patient interface provides a fully automated mechanism for generating a personalized page or area within the provider's Web site for each user serviced by the one or more providers, and the provider's Web site is in communication with at least one user's computer through the provider/patient interface. In certain preferred embodiments of the communication system, at least one provider's Web site and at least one user's computer are hyperlinked through the provider/patient interface.

In the preferred communication system of the present invention computer system, submissions of information from one or more providers and from the users of the electronic communications system are in standardized formats. Moreover, the standardized formats are preferably derived from standard administrative and billing codes used by the provider.

The present invention further provides a method of automatically and electronically communicating between at least one health-care provider and a plurality of users serviced by the health-care provider, wherein the communication occurs over an electronic communication network through a provider/patient interface, wherein the method comprises (i) a communication is initiated from one of the plurality of users to his/her provider for information; (ii) the communication is transported through the provider/patient interface over an electronic communication network to a site which is unique to the provider on a central server; whereupon the communication is automatically reformatted and processed

or stored; (iii) the communication is electronically compared with mapped content, which has been previously provided by the practice to the central server, to formulate a response as a static or dynamic object, or a combined static and dynamic object; and (iv) the communication is automatically returned, along with the requested information, to the user's computer, whereupon the communication and information are read by the user or stored on the user's computer. Moreover, when the user's communication includes a communication or inquiry regarding additional information or an episodic event, the method further comprises the additional step of notifying the provider and the user automatically that a response or information has been sent to the user's computer.

The preferred embodiment of the method of the present invention is implemented by the electronic provider-patient interface system (the "ePPi system").

In the method of the present invention, the central server comprises: a Web server capable of responding to HTTP requests; a database server capable of maintaining complex relationships between users and information content; and a modular data collection program capable of receiving information as coded data from practices in a variety of different formats, and reformatting and storing the information. The central server may further comprise an electronic mailing capability to support the automated transmission of notifications to users or providers.

In addition, in the method of the present invention, there are one or more providers, each of which is in communication with a plurality of users.

In the method of the present invention, the communication network is either an Internet or intranet network. The preferred communication network is the Internet.

The preferred method of the present invention comprises a provider-patient interface Service Center, wherein custom content is dynamically assembled and delivered. Moreover, delivery in the preferred method occurs over the World Wide Web, and custom content is assembled using Active Server Pages (ASP) technology. Custom content is preferably selected from a library of information, and the selection is based upon specific data received from the provider about each user, who is served by the provider. The data about each user comprises information about each user's visits to the provider. Further, the custom content selection in the preferred method is based upon logical mappings that reside in the relational database server.

The present invention also provides a method comprising a unique provider's Web site for each of the one or more providers, wherein each Web site is supported by or in communication with the central server through the Service Center. Moreover, in the preferred method the provider/patient interface provides a fully automated mechanism for generating a personalized page or area within the provider's Web site for each user serviced by the one or more providers, and the provider's Web site is in communication with at least one user's computer through the provider/patient interface. Also, in certain preferred embodiments of the method, at least one provider's Web site and at least one user's computer are hyperlinked through the provider/patient interface.

In the preferred method of the present invention computer system, submissions of information from one or more providers and from the users of the electronic communications system are in standardized formats. Moreover, the standardized formats are preferably derived from standard administrative and billing codes used by the provider. The information delivery by the preferred method is in HTML format.

In yet another preferred method of the present invention automatic and electronic communication is made possible between and among at least one health-care provider and a plurality of users serviced by the health-care provider, wherein the communication occurs over an electronic communication network through a provider/patient interface. The method comprises the following steps: (i) a notification or communication is initiated from a provider to one of the plurality of users serviced by that provider; (ii) the notification or communication is transported through the provider/patient interface over an electronic communication network to a site which is unique to the provider on a central server, whereupon the notification or communication is automatically reformatted and processed or stored; (iii) the notification or communication is electronically compared with mapped content, which has been previously provided by the practice to the central server, to automatically formulate the notification or communication to include such additional objects or information as may be assigned by the mapped content; (iv) the notification or communication is automatically forwarded to the user's computer, whereupon the notification or communication is read by the user or stored on the user's computer; and (v) the provider and the user are both automatically notified that the notification or communication has been sent to the user's computer.

One embodiment of the present invention provides an on-line appointment system. A user can browse the information provided by the provider's Web site on the central server, preferably on his/her own patient page. The user can then request information, such as an appointment for a selected time and date, and for a particular doctor in the practice. The server then sends static information related to the appointment to the browser on the user's computer for storage, along with automatic notification to the provider and the user that information has been sent. When the user wants to confirm the appointment, the browser sends the corresponding static information to the practitioner's specified Web page for processing.

Another embodiment of the present invention provides an on-line information service, wherein information regarding a variety of topics, such as a particular symptom or disease, is provided either in response to an inquiry from the user or as available data in the provider's site on the Web server. The user may browse through the various pieces or types of information by making HTTP requests from the provider's Web site on the central server. As stated above, the patient has the security of knowing that the information is accurate since it is provided on-line by his/her own doctor, rather from an arbitrary and unknown source on the Internet.

These and other features of the present invention will be disclosed in the following description of the invention together with the accompanying figures.

BRIEF DESCRIPTION OF THE FIGURES

FIG. **1** is a conceptual diagram of a computer network such as the Internet and the general client/server model.

FIG. **2** is a conceptual diagram depicting the ePPi core functional architecture.

FIG. **3** is a conceptual diagram depicting the Practice View and Patient View functional output of the ePPi Service Center, which comprises a Web server; a database server; a modular data collection and storage program; and an electronic mailing capability to support automated transmissions.

FIG. **4** depicts the basic Patient View screen layout using 5 HTML "frames."

FIG. **5** depicts the schema tables resident in the ePPi database, and the explicit relationships between the tables.

FIG. **6** is a conceptual diagram depicting the 3-tier architecture of the ePPi system, represented as follows: lowest tier=database; middle tier=component, and top tier=ASP pages.

FIG. **7** is a conceptual diagram depicting the collection of data into the ePPi Service Center from various data sources and communicating the information between the practice and the patient.

FIG. **8** is a conceptual diagram depicting the modular architecture of the POMSSweeper program, showing the relationship of parser plug-ins to master control portion.

FIG. **9** is a conceptual diagram depicting the logical processing applied by the master control portion of the system for the Appointment/Registration sweep.

FIG. **10** is a conceptual diagram depicting the logical processing applied by the master control portion of the system for the Transactional sweep.

FIG. **11** is a conceptual diagram depicting the objects and application of a generic Plug-In.

FIG. **12** is a conceptual diagram depicting the objects and applications of the Plug-In used in the ePPi system for the exemplary FAHC test site.

DESCRIPTION OF THE INVENTION

The Electronic Provider-Patient Interface (ePPi™) automated communications system creates and delivers personalized patient pages, service and information, thereby permitting doctors to provide personalized service to their patients with little or no additional effort. Reduced costs and increased capacity are achieved by the ePPi system because there are far fewer calls to the doctor or staff for simple inquiries and follow-up instructions, for prescription refill and appointment requests, and for directions to the office, laboratory, radiologist or specialist's office, general information and the like. More efficient work processes can be established by managing call backs, as opposed to reacting to interruptions by call-ins. Information is more effectively handled under the ePPi system because the information is gathered and reviewed in advance. In addition, by means of the present invention, more accuracy can be achieved on computerized forms, and there is improved patient compliance.

For both the patients and the doctors, the ePPi system is considerably more reliable and effective than commercial or arbitrary Internet health-care portals. In fact, patient feedback and usage statistics from those who have tested the ePPi system validates that patients much prefer this approach. Patients have indicated that they value the fact that the health-care information is delivered to them from a source they can trust, and without the need to search to find it. Doctors have indicated that they prefer the ePPi system because although fully automated, they are familiar with the content, know how the patient got the information, and can control whether or not advertisers have access to the patient.

In separate test studies patient satisfaction was seen to have improved when the ePPi system was used because patients are provided access to the services of the practice 24 hours a day, 7 days of the week. Patients can confirm what they thought they understood during their patient visit, and in addition receive more information than they could have absorbed at the visit. The effect is that-the-patient feels more informed, more involved and better served. Patients value the personalized services offered by the practice using ePPi, and as a result, trust in the doctor is increased. Patients also appreciate the flexibility and privacy afforded by the ePPi system in retrieving information from the practice. Because the patient page is on the ePPi system, the patient spends far less time filling out forms on a clipboard at the doctor's office, and they receive much more personalized answers to questions. Finally, neither party needs to track-down or wait for the other by telephone. Therefore, the patient can make inquiries and receive replies and information without having to wait by the telephone.

The ePPi system and methods for maintaining static information in a client-server based computer network system are disclosed. The following description is presented to enable any person skilled in the art to make and use the invention. However, it will be apparent to one skilled in the art that these specific details are not required to practice the present invention. Although, strategic partnerships with doctors and medical care practice groups are essential to the operation of the ePPi system, eventually, the system can be distributed to, for example, schools or case management companies.

The ePPi system is focussed at the physician's front office, and depends upon the need for doctor/patient communications. Thus, the system fulfills a different need than that which is provided by companies, such as Healtheon/WebMD, which primarily focus on back office services. By comparison, the ePPi patient/provider system is an extremely low impact solution for the physician's front office, which allows large numbers of practices to quickly offer a better conduit to information and health-care than a back-office solution. By a "front office" solution is meant one that affects the direct communication between a patient and the doctor, i.e., in person, by telephone, by hand-outs, and the like. The enhanced communication provided by ePPi involves little or no training, no conversion of existing systems, and is based essentially entirely on the doctor's own existing administrative systems.

There are presently no competitors in this type of front-office management, and no system comparable to the ePPi system exists for providing automated doctor/patient communication on-line. Nevertheless, as the commercialization of the present invention is developed, and the success of the ePPi system is recognized, others will undoubtedly try to duplicate the ePPi system, although it may be called by a different name, and it may include one or more additional services. Vendors with significant market shares of the practice office management software (POMS) would have a substantial market advantage if they were to offer a competitive product based upon the ePPi system.

Therefore the following descriptions of the ePPi system and selected specific applications of the system are provided only as examples. Various modifications to the preferred embodiments will be readily apparent to those skilled in the art, and the general principles defined herein may be applied to other embodiments and applications without departing from the spirit and scope of the invention. Thus, the present invention is not intended to be limited to the embodiments shown, but is to be accorded the widest scope consistent with the principles and features disclosed herein.

I. General Implementation of a Client-Server System on the Internet

Once understood, the many terms and general principles involved in client-server computing, as shown in FIG. **1** and described below, will be used to generally characterize and describe the ePPi system. FIG. **1** illustrates a conceptual diagram of a computer network (**100**), such as the Internet Computer Network (**100**), which comprises small computers (such as computers **102**, **104**, **106**, **108**, **110** and **112**) and large computers, such as computers A and B, commonly

used as servers. In general, small computers are "personal computers" or workstations and are the sites at which a human user, such as a patient, operates the computer to make requests for data from other computers or servers on the network. Usually, the requested data resides in large computers.

In the present scenario, small computers are clients and the large computers are servers. Notably, in the present specification, the terms "client" and "server" are used to refer to a computer's general role as a requester of data (the client, representing in the present invention, e.g., the patient) or provider of data (the server, representing in the present invention, e.g., the ePPi system acting on behalf of the provider or practice).

Although the HTML and other elements are envisioned as located on a remote server, it is also possible that some or all of these may have been loaded into a storage cache during a previous request during this or a previous session without departing from the spirit of the invention. A client can refer to any device connected to the ePPi system via the Internet or other IP (Internet Protocol) transport methods, including, but not limited to, devices such as televisions, computers, hand-held or wireless electronic devices, or any device that uses IPs and a transport medium. Moreover, the networking communication lines as implemented can be broadly construed to include, without limitation, any method or link known in the art for transferring data to and from a server including telephone wires, coaxial or fiber cable, radio waves, infrared radiation ATM link, FDDI link, satellite link, cable, twisted pair fiber-optic broadcast wireless network, the Internet, the World Wide Web, or even a Local Area Network (LAN), Wide Area Network (WAN), or any other intranet environment, such as a standard Ethernet link. When alternative transport methods are used, the client communicates with the system using protocols appropriate for the network being used. All such embodiments and equivalents are intended to be within the scope of the present invention.

In general, the size of a computer and the resources associated with it, do not preclude the computer's ability to act as a client or a server. Further, each computer may request data in one transaction and provide data in another transaction, thus changing the computer's role from client to server, or vice versa. The distance between servers or between client and server(s) may be very long, e.g., across continents, or very short, e.g., within the same city. Further, in traversing the network the data may be transferred through several intermediate servers and many routing devices, such as bridges and routers.

The World-Wide-Web (the "Web") uses the client-server model to communicate information between clients and servers. Web servers are coupled to the Internet and respond to document requests from Web clients through their browser programs.

In operation, a plurality of provider or patient processors opportunistically couple one or more of a plurality of HTML document servers in the ePPi Service Center. It should be appreciated that each patient and the one or more servers comprising the ePPi Service Center can establish and maintain concurrent "sessions" or dialogs with a plurality of the opposite number. That is, as in FIG. **1**, client **1** could interact with servers A and B, while client **2** could be in session with servers B and C.

The ePPi system inter-operates with standard Web server and database components to mediate and enhance communication between a patient and his/her doctor's office. The patient receives e-mail notifications from the ePPi Service Center, automatically delivered directly to his/her own e-mail service provider and which are accessible using his/her current e-mail software. To access the personalized information on the doctor's Web site (hosted on a Web server at the ePPi Service Center), the patient uses a standard Web browser program on his/her PC, Web-TV device, wireless hand-held device, or the like. Nevertheless, there is still some latitude in choosing the basic platform on which the ePPi is constructed. For example, the following software components comprise the preferred ePPi platform:

- a base operating system for the computer(s) that provide the ePPi functionality;
- a Web server program to respond to HTTP requests from a user's Web browser, and deliver HTML or other documents for display on the user's computer screen;
- a Database Management System to store the information about the practices (including site branding options), patients (including visit-specific data), and third party informational content (patient instructions, healthcare articles, etc.), and
- a set of development tools and languages with which the unique functionality and features of the ePPi system are constructed.

The inventors have chosen to implement the ePPi system using the following components:

- The Windows NT Server operating system. Windows NT™ is a multi-platform operating system provided by Microsoft Corp. of Redmond, Wash., capable of utilizing full-power, dual-processor computer systems. A security infrastructure is totally integrated with Windows NT Server, enabling an easily maintained and highly secure Web development and deployment environment.
- The Internet Information Server (IIS) Web server, and the Site Server program (both from Microsoft). The Windows NT server includes IIS, which is a completely integrated Internet application platform, including a high performance Web server, an application development environment, integrated full-text searching capability, multimedia streaming, and site management tools. Site Server provides advanced capabilities for content management and publishing, mail-merge, and personalization.
- The Microsoft SQL Server database management system. Also from Microsoft Corp. of Redmond, Wash., SQL Server is a fully relational database management system (RDBMS) that can support the complex data relationships that are central to the ePPi system's personalization of content to each patient based on their encounters with his/her doctor.
- Microsoft's Active Server Pages technology (included in IIS), with VBscript and JavaScript programming languages providing logic to assemble dynamic HTML pages, and development tools that include FrontPage, Visual InterDev, and Visual SourceSafe. All of these development tools are also from Microsoft Corp. of Redmond, Wash., and they offer a high degree of inter-operability. However, no single tool is necessarily a requirement for the chosen implementation, and one reasonably skilled in the art can develop equivalent functionality using similar tools from different suppliers.

Nevertheless, the ePPI system need not be, and is not intended to be limited to use on Windows NT operating system, and the presently provided description is provided only as representative and exemplary information. One of

ordinary skill in the art would know, based upon the present disclosure that many equivalent procedures, components and tools are available that function in substantially the same way, to achieve substantially the same results as those which are described and can be substituted so long as the ePPi system continues to function in substantially the manner herein disclosed. For example, the base operating system could be UNIX (or Linux), the Web server could be Netscape, the database server could be Oracle, and the development tools could include CGI, Pert, Java, TCL, and the like. All such embodiments and equivalents are intended to be within the scope of the present invention.

As an example, the following sequence describes a representative scenario demonstrating the ePPi enhanced provider-patient interaction and how it interacts with the practice scheduling and billing systems, with a patient, and with the practice staff. The ePPi provides a number of enhanced communication pathways between the provider and the patient.

1. A patient (example: Jane Doe) requests an appointment, either by phone or using an on-line form on the ePPi practice Web site.

2. One of the practice's schedulers books the appointment, using the practice's normal scheduling software.

3. The practice transmits a data file from its scheduling system to the ePPi Service Center, where it is loaded into the database. One of the records in the datafile reflects patient Jane Doe's newly scheduled appointment. Using mappings that were set up in the ePPi database for this specific practice, the ePPi Service Center associates Jane's new appointment with specific patient instructions that are uniquely relevant to the reason for Jane's visit.

4. The ePPi automatically sends an e-mail message to Jane Doe, informing her that there is new information for her at the practice's Web site. Upon receipt of the e-mail notification, Jane Doe clicks onto the practice Web site URL at the bottom of the e-mail address (or types the URL into her Web browser program, if her mail software does not support the ability to click on a URL). Thus, standard operating Internet communications are enhanced by the ePPi's database of patient-specific information and practice-specific branding options

5. The ePPi Service Center responds to the Web browser on Jane Doe's computer by transmitting an HTML page to Jane's Web browser, which contains the "home page" contents for Jane's doctor's office, with the branded display options defined specifically for the practice's Web site.

6. Jane Doe sees the practice Web site home page on her browser. She clicks the hyperlink to display the site's secure Login form, types her user name and password, and clicks the form's "Submit" button to transmit her login information in a secure manner to the Web server in the ePPI Service Center.

7. The ePPi Web server receives Jane Doe's login information and validates her in the ePPi database. Once her identity has been authenticated, the ePPi Web server dynamically assembles an HTML page that contains information about the practice, as well as information specific to Jane's own recent and upcoming scheduled visits, and transmits this personalized home page to Jane's Web browser.

8. If Jane clicks a link on her personalized home page to request more detailed information about her new scheduled visit, the ePPi Web server retrieves details from the ePPi database about Jane's new visit (the date/time, the doctor's name, and the reason for the visit), dynamically assembles the information into an HTML page that is formatted with the branding options for Jane's doctor's Web site, and transmits the page to Jane's Web browser. The page includes a hyperlink that Jane can click for more detailed information and instructions about her upcoming visit.

9. If Jane clicks the hyperlink to read the personalized instructions, the ePPi Web server retrieves the visit-specific instructions related to Jane's upcoming appointment from the database, formats the information according to the branding options,for the practice Web site, and transmits the HTML page to Jane's Web browser.

10. Jane visits her doctor on the scheduled date and time of her appointment. During the visit, the doctor or nurse who sees Jane records information on a charge sheet that indicates the procedure(s) performed, and the diagnosis(es) observed.

11. After Jane's visit, one of the practice's billing clerks enters the diagnosis and procedure information into the practice's normal billing software. The diagnoses and procedures are entered using healthcare industry standard ICD-9 and CPT-4 codes, which facilitate collection from insurance companies and other third-party payers.

12. The practice transmits a data file from its billing system to the ePPi Service Center, where it is loaded into the database. One of the records in the datafile contains the diagnosis and procedure codes for Jane Doe's recent visit. Using mappings that were set up in the ePPi database for this specific practice, the ePPi Service Center associates Jane's own diagnoses, and the procedures which were performed during her visit, with specific post-visit instructions.

13. The ePPi automatically sends an e-mail message to Jane Doe, informing her that there is new information for her at the practice's Web site.

14. Upon receipt of the e-mail notification, Jane Doe clicks on the practice Web site URL at the bottom of the e-mail address (or types the URL into her Web browser program, if her mail software does not support the ability to click on a URL). She enters her unique user name and password using the secure Login form, and sees her personalized home page, which now includes a notification that there are new instructions and recommended reading from her doctor's office.

15. Once Jane clicks the link, the ePPi Web server reads the ePPi database to determine the latest patient instructions, articles, recommended reading, etc. that are relevant to Jane, based on her own diagnoses and procedures. The ePPi Web server dynamically assembles this information into an HTML page, brands it with the options for the practice Web site, and transmits the page to Jane's Web browser.

16. Jane reviews the list of instructions and articles. To read a particular item in full, she clicks on the title of the item. In response, the ePPi Web server formats the information according to the branding options for the practice Web site, and transmits the HTML page to Jane's Web browser.

The foregoing scenario is, of course, intended only to be representative of some of the features of the ePPi system. It is not meant to depict all of the capabilities of the ePPi system, nor limit same. However, the scenario was specifically chosen to illustrate how the ePPi system uniquely maps data from the practice scheduling and billing systems, into information libraries, in order to deliver highly relevant content to patients based on their interaction with their doctor's office.

II. Characterization of the ePPi System

For the purposes of the present invention certain terms are defined. The terms "doctor," "physician," "health-care

provider," and "practitioner" are used interchangeably with the term "provider" to refer to the individual, service or practice, which is registered and authorized by the ePPi system, and on whose behalf the ePPi system presents to the patient a "branded" Web site. For example, the term "provider" is used in the name of the electronic provider-patient system, but it is intended to generically refer to one or more doctors, health care service providers or practitioners, or the like, registered in the system, as would be understood by one of ordinary skill in the art. It could refer to a single doctor, to an office of doctors, to a group of doctors working out of more than one office, to a hospital group or medical center, to a group of small hospitals, or to any variation thereof.

The term "provider" could refer not only to medical doctors, but also to dentists, opticians, physical therapists and the like, alone or in combination with physicians. The service could be extended to alternative medical practices, such as chiropractors, herbalists, acupuncturists, aroma therapists, and the like. Moreover, it could eventually include veterinary practices, schools, case managers and the like. Broadly, whether an individual office or a group, the service provider, including the medical and administrative staff, regardless of the specialty, is referred to as a "practice."

The term "patient" is used interchangeably with "user," "client," or "consumer" and refers to the authorized individual receiving the service or information, and operating the client computer. Thus, the "patient" may in a broad sense refer to the patient's representative, such as a parent acting on behalf of their child, when the child is the actual patient of the doctor. In the alternative, if the service is used for veterinary offices the term "patient" broadly refers to an owner, trainer or care-giver representing the animal which is actually being treated. As described below, authorization is required from the practice, which is registered on the ePPi system, before a patient is added to the system.

Of course, because the patient services are individualized, a single patient could participate in more than one member practice using the ePPi system. Each would manage its own patient page and provide specific patient information, which need not, and presumably would not, be the same from each practice.

Although based upon the general principles described for client-server interactions, several factors at the core of the ePPi system make it unique.

1) Context—Information from "My Own Doctor"

The ePPi system delivers all information within the context of services offered by the patient's own physician. For example, a message from a child's pediatrician (which is automatically generated) that it is time to get a vaccination is just a mouse click away from an on-line appointment request with the same doctor. Within the same view, the parent (or patient in the case of other specialties) has access to a number of related services, including, for example, but without limitation, a personalized list of medications with related information, prescription refill request, pre- and post-visit instructions, practice news, provider directories and much more.

All information is displayed in the patient's personal page (whether it is a personalized instruction or the result of a search) and comes through his/her own physician's Web service. Consequently, for the patient, all concerns are alleviated about the value or validity of the information they have received.

2) Coordination—More Than Just Integration

By leveraging data from existing practice systems and putting it in a context that makes sense to the patient, the ePPi system provides a service that is highly valuable to the patient, but which requires little or no additional effort for either the physician or his/her office staff. The system does much more than simply integrate data from disparate systems into a single view for the patient, the ePPi system coordinates data from those systems to actually decide what other information should be delivered to the patient.

For example, based on a procedure or the patient's type of office visit, which is stored in the doctor's office management system, the ePPi delivers to the patient's own personal page, a specific instruction set located in an on-line self-care guide. However, this is but one example of how the ePPi leverages and coordinates information stored in multiple systems to create a specialized set of data to enhance the patient's access and understanding of his/her medical care. There are many, many such applications, which are all processed automatically that provide equally valuable increased service to the patient, without increased cost or effort to the medical staff.

3) Simplicity

Testing has proven that a new practice can implement the ePPi system with just a few hours of initial start-up time for the office staff, and with minimal effort thereafter. Training consists of a simple tutorial, without the need for software specialists or training personnel, and takes only 30 minutes to complete.

To facilitate a low cost and low impact implementation of the ePPi system at the doctor's office, a solid architectural foundation has been put in place to permit new sites to be rapidly and efficiently brought on-line.

4) Configurability

The "look and feel" of the Web site is uniquely configurable for each practice. Accordingly, each practice has a distinct, branded Web site. Colors, fonts, logos and incidental graphics are matched to the practice's existing or newly chosen design theme. Each practice can, therefore, choose from the pre-defined set of available functionalities (e.g., appointment requests, medical lists, etc.) with the ability to extend the core features with customized Web pages, forms, and service requests that are tailored to the style and established protocols of the particular practice.

5) Scalability

The ePPi system has been built to handle the increasing volume of Web pages, database content, and I/O processing that will be involved as increasing numbers of practices are brought on-line. The ePPi core architecture achieves both configurability and scalability by combining industry standard non-proprietary components in a unique way that takes into account the thousands of possible relationships that could possibly occur among patients, providers, staff, conditions, discrete data elements and the like, to produce a proprietary architecture that allows for low impact, rapid implementation and flexibility.

The forementioned five characteristics—Context, Coordination, Simplicity, Configurability, and Scalability—are realized through the ePPi's functional architecture. These characteristics also distinguish the features, attributes and elements of the ePPi system from existing or potential other front-office communication solutions, if any.

The architecture of the ePPi system incorporates the following five key methodological approaches (A–E), which when taken together, and as depicted in FIG. **2**, enable the system to enhance the provider-patient communication process.

A) Database-Resident Relationships

Central to the ePPi architecture is a relational database (the DBMS, database management system) as shown in FIG. **2** that maintains information about the practices, the patients

and the content in the form of related tables. Relational databases are powerful because they require few assumptions about how data is related or how it will be extracted from the database. As a result, the same database can be viewed in many different ways and spread across several tables, as opposed to a flat-file database, which is self-contained in a single table. Recording this information in a database allows the system to provide considerable flexibility, including:

- A library of standard Web site links, frequently asked questions, etc. from which the practice can choose;
- A library of rules linking standard ICD-9 and CPT-4 codes with trusted clinical content licensed from one or more third party providers; and
- The ability to extend the link-libraries on a per-practice basis, should the practice wish at a later date to provide its own content (or merely wish to change associations).

In addition, by using a powerful relationship database engine, computation and processing of the personalized rules can be "pushed" closer to the data itself using a 3-tier architecture shown in FIG. **6**, which reduces processing time, increases performance, and results in greater scalability.

B) Database-Resident Patient-Practice Episodes

"Episodes," referring to episodic events, such as upcoming appointments, as well as visits that have already occurred, are maintained in tables in the database, as shown in FIG. **2** as "(B) Episodes." Then, standard links to clinical content that are set up by the practice (or selected from the ePPi "link libraries" automatically deliver content to each patient's personal Web page (the "patient page"). A feature that makes the ePPi system unique is that delivery of the content is automatic. No additional program needs to run in the background. Merely adding the episode to the table results in the appearance of content. Moreover, the mere addition of an episode record also triggers the generation of a notification via e-mail to the patient, that something has been added to the page, further demonstrating the power and efficiency of the database engine itself.

C) Practice-Specific Web Site Branding

In the ePPi Web server, each practice site is organized according to a basic, common folder structure, with standard file names for the common content pages, graphical elements, etc. Colors, fonts and other "look and feel" elements are localized in a single definition file, and all Web pages in the site automatically inherit any change made to that file. As a result, a new Web site can be initialized, within a matter of minutes, with a standard visual theme taken from a selection of pre-defined templates. A representative page of an exemplary Web site is shown in FIG. **2** under the heading "(C) Practice-Specific Branding."

D) Feature-Function Catalog

To give each practice the ability to choose from and extend the core functionality of the ePPi system, basic user navigation elements have been designed around a basic "Feature-Function Catalog," as shown in FIG. **2**. Each entry in the Catalog defines the appearance of the function in the menu, as well as the behavior when the patient user clicks on the item (i.e., a form, a static Web page, a link to an external site, etc). The default behavior of all Catalog entries is pre-defined, although a practice can customize the structure by at any time over-riding any or all of the entries, changing the order, the names, the mappings, etc. For example, as a demonstration of the power and flexibility of the Catalog structure, if a practice has already developed a personalized Web site, the ePPi system allows the practice to fully leverage that investment by creating new practice-specific Catalog entries, which "point" to those practice pages, or even over-ride the standard entries to point to those pages.

E) Practice Office Management System (POMS) Interfaces

The branding options and the feature-function catalog in the ePPi system allows each practice to customize and characterize ("brand") its own Web site. The patient-level personalization is achieved largely through the interface with the scheduling and billing systems of the practice.

The POMS interface subsystem in the ePPi system is modular, thus it is highly adaptable and can support virtually any scheduling or billing system. See, "(E) Practice Scheduling and Billing System Data" in FIG. **2**. Standard data formats are defined, but if a POMS system vendor can only provide data in a particular format, the ePPi system can, as shown in FIG. **2**, create a "plug-in" for the interface that merely parses the data records and hands them off to the input module. Once developed, the plug-in can be used for all practices that utilize the same POMS system.

Receipt of information about the patient into the ePPi system allows the "narrowcast" of information to that patient, based upon the way that the practice elects to map visits to the standard and custom content. By narrowcast is meant the ability of the ePPi to target content delivery and alert messages to specific patients, in contrast with the more common "broadcast" of information to large groups of users. The ePPi system leverages the patient episodic data, and the database-resident relationships, to deliver content to individual patients, based on practice-specific rules and practice-specific site branding and formatting options. The POMS interface delivers the episodic data to the ePPi Service Center, thus providing the raw material upon which the ePPi acts (see, FIG. **2**).

FIG. **2** further illustrates how methods A through E interact at the core of the ePPi to provide a unique and customized interactive experience for every patient and every provider. As shown in FIG. **2**, the POMS practice scheduling and billing data (E) enter the parser plug-in(s), are parsed, filtered and stored in (B) the repository of patient-practice episodes. Subsequently, the rules of (A) the database-resident relationships are used to present HTML Web pages to patients according to the options defined in (D) the feature-function catalog, with a practice-specific customized look-and-feel defined according to (C) the branding options.

It is also envisioned that some or all of the elements of a Web page of the present invention can be conveyed to the user aurally (by a speaker set, for example) or by tactile or olfactory means as well as on a display screen. This would be particularly useful for handicapped patients, such as blind patients. The system can also be readily adapted to transmit information in foreign languages, as necessary.

The value of the ePPi system has broad applications. For example, data from the test sites has proven that patients respond and alter their behavior when they receive instructions from their own physician. In fact, when a flu shot reminder was sent out in a test case, over 60% of the on-line patients in the service visited the site within 24 hours. More importantly, 30% of the patients attending a subsequent focus group reported that they got the flu shot as a result of the notice. This type of influence is also of significant value to companies, such as pharmaceutical manufacturers, who stand to generate significant additional revenue from improved compliance from their existing customers.

Accordingly, if advertisers are granted direct access to the patient (the doctor will always control the decision as to

whether a third party will be granted access to their site) the vendors can make the patient aware of and provide the patient with the opportunity to purchase their products on-line. Thus, the site offers a unique opportunity, in selected circumstances, to provide access to advertisement and/or e-commerce.

Much like physicians, case managers and payment systems (such as Blue Cross) are also looking for ways to provide information to, and enhance compliance from, member patients for whom they carry the financial risk. Use of the ePPi system in such instances would apply the same principles as described above, except that the data would be drawn from the payer's claims database, and patient interaction would be with the case manager.

Call centers offer services wherein patients can talk to a trained professional, such as a nurse or midwife, about a particular health problem. The discussion may result in referral of the patient to a physician or additional measures may not be necessary. A great deal of time in a typical medical practice is spent in triage during the question and answer period, and even more collecting pre-visit information in the case of a referral. However, by using the ePPi call center module, the time required for triage by the nurse may be reduced by as much as 50% by automating much of the question and answer and pre-visit data collecting process. This service translates into significant capacity gains for the call center, and in more privacy and flexibility for the customer or patient.

Patients are in many circumstances asked to, and in fact, prefer to monitor their own health care at home using a variety of home monitoring devices. Such devices often have the capability to plug directly into a local PC and automatically download data. The ePPi system provides modules and home-monitoring device interfaces to pick up data from the patient's PC and transfer it to the physician, practice, or service. The system further provides the capability of establishing an interactive process with the doctor, practice or service to facilitate warnings, feedback and the like between the patient and the doctor.

In addition, although there is not currently a link between prescription ordering and prescription filling or delivery, ePPi allows physicians to order new prescriptions or for patients to order authorized prescription refills directly from a member pharmacy through the system interface. By using automatic prescription pads in the office, physicians can interact directly with the pharmacy, thereby facilitating direct delivery of the medication to the patient, but more importantly eliminating many of the errors (some of which are life threatening) that currently occur when hand-written prescriptions are filled. As a confirmation, the patient is provided with a written summary of each of the drugs or medications being taken, thereby permitting the doctor to warn of dangerous drug interactions and the pharmacy to provide the necessary instructions or warnings, as refills occur. This service is particularly valuable to the elderly or handicapped patient, or to the parent of a sick child.

These and numerous additional functions, although they may not be currently activated in the present versions of the ePPi system, nonetheless exist and can become operational with minor programming updates of the present system. It is intended that these functions also are encompassed by the present invention, so long as the basic ePPi system remains functional as herein described.

Clearly, the ePPi system refers not only to a product, but also to a service, both of which are delivered at/from the following 3 main elements.

1) The Service Center

The "Service Center" includes, but need not be limited to, management and administration by the ePPi system administrator of the Web Site design and hosting, the standard content subscriptions, the practice-supplied content, the continuous content updates, data security and encryption, project planning, implementation management and patient roll-out strategies. As detailed in FIG. **3**, service is the heart of the ePPi solution. Pre-established components, such as the feature-function catalog and patient instructions, combined with the ePPi implementation team allow the practice to deliver a comprehensive information service to its patients without requiring them to develop or acquire marketing or technical expertise. The service begins with the set-up process at the practice, and continues with the delivery of data to its patients, as shown in FIG. **3**.

The ePPi system comprises a set of one or more server computers, which perform various tasks. These computers may or may not necessarily be co-located in a single facility, although they are collectively referred to as residing in the "Service Center" (see, FIG. **3**). Regardless of their physical location, they comprise a logical unit, working in concert to provide the ePPi functionality. As shown in FIG. **3**, the functional components of the ePPi Service Center include: a Web server capable of responding to HTTP requests from users; a database server capable of maintaining complex relationships among practices, patients, doctors, and healthcare informational content; a modular data collection program that receives, reformulates and stores information from doctors'or practitioner's scheduling and billing systems regarding patient visits; an electronic mailing capability which supports the automated transmission of notifications to patients and transmissions to the practice.

Furthermore, the architecture has been designed with maximum flexibility in mind, so that the ePPi Service Center may be scaled appropriately to the needs of the users. Thus, it may be required to have more Web servers and fewer database servers, or more database servers and fewer Web servers. A single computer can host a single functional component, or it may host a combination.

Initially, one operator workstation administers the system. As the need arises for additional workstations to provide increased capacity, additional operator workstations can be added by adding additional computer systems, installing the administration software, and connecting them by, e.g., LAN.

2) The Patient View

The "Patient View" includes, but need not be limited to, management of medication information, personalized health topics, appointment/refill requests, pre- and post-visit instructions, practice overviews, news and "hot" topics, provider directories and maps and directions. As detailed in TABLE 1, the Patient View component: allows patients to retrieve information at any time, from any location, so long as there is Internet access. However, the features provided in TABLE 1 are intended only to be exemplary, and the invention need not be in any way limited. The Patient View is tightly secured as an encrypted communication for patient specific data. The View is extremely simple to use, and it presents information that is tailored to the patient's specified interests and based upon the patient's relationship with the participating physician.

TABLE 1

Detailed features and benefits from the Patient View.

Feature	Benefit
Broadcast Notifications	
Receive healthcare reminders via e-mail from the doctor's office	Patients have increased awareness of healthcare issues of personal significance.
Notices are filtered and personalized based on the patient's age, gender, and/or interests.	Improved adherence to advice/instructions provided by the doctor.
Areas of Interest & Prescriptions	Simple to view - all data is pre-formatted and
Pre-packaged, easy to understand data including:	arranged based on the patient's preferences.
Self-care instructions	No "surfing" - topics important to the patient are
Pre-filtered health care topics	displayed with single mouse click.
Prescription information	No nonsense access to quality information, pre-approved by the practice.
Pre & Post-Visit Information	Clinical content related to specific visits is available
View a list of:	any time.
Upcoming or previous visits with specific instructions	Information is available without having to use the phone or wait until the practice is open.
The scheduled provider for the visit	Fewer forms to complete and less time spent in the
The location of the visit	waiting room.
How to prepare for a first visit or test	Patients can prepare for the visit before they arrive.
What to bring	Fewer rescheduled tests because of unprepared patients.
Forms/Data Collection	Request appointments, refills or callbacks at any
Customized forms allow patients to input any sort	time.
of data:	Questions are answered without having to wait for
Appointment, refill or call back requests	the doctor's office to call back.
Demographics	Reduced time in the waiting room because forms are
Medical history	filled out in advance, according to the patient's
Daily health monitoring	schedule in the privacy of his/her or her own home.
	Eliminate unnecessary screening visits with medical support staff.
General Information	Greater access to facts about the practice and the
The patient can view:	providers.
Practice overviews	Patients learn about the practice on their own
Provider directories	schedule.
Interactive maps and directions	Directions are easily accessed and printed for use at
Frequently asked questions	the time of travel.
Hot topics	Patients are made aware of topics or events that they
Practice news	might not have without this type of access.
	Questions are answered without having to call the practice.

3) The Practice View

The "Practice View" includes, but need not be limited to, management of targeted broadcast notices, handling of appointment requests, handling of prescription refill requests, patient demographics, patient medical histories, patient self-care tracking and usage statistics. As detailed in TABLE 2, the Practice View allows the doctor and/or his/her staff to receive information from and send responses and related information back to the patient. However, the features provided in TABLE 2 are intended only to be exemplary, and the invention need not be in any way limited. Standard functions include targeted broadcast notices, requests for appointments, prescriptions and call-backs, or completed patient demographic, medical history or compliance forms. By using the ePPi system, the practice benefits from fewer interruptions and more complete and accurate patient information. The ePPi system employs secure certificates technology to ensure that administrative functions within the Practice View can only be accessed by authorized staff from secure workstations.

TABLE 2

Detailed features and benefits from the Practice View.

Feature	Benefit
Broadcast Notifications	
The practice can generate, filter and send health notices to subsets or all of their patient population.	Patients have increased awareness of healthcare issues of personal significance.
Notices are filtered and personalized based on the patient's age, gender, and/or interests.	Patients are more adherent to advice/instructions provided by the doctor.

TABLE 2-continued

Detailed features and benefits from the Practice View.

Feature	Benefit
Appointments & Callbacks	
Presents the practice with patient requests for appointments, prescription refills, callbacks, etc. On-line requests allow the practice to manage workflows more efficiently. Requests can be: Routed directly to the designated practice Sorted by urgency, availability etc. Printed for Medical record filing	Reactive work is turned into managed workload E-mail replies can be sent without having to "reach" the patient. Reduced time on patient follow up. Significant reduction in incoming and outgoing telephone traffic.
Health Maintenance Forms	
Data from electronic forms received from patients can be used to avoid screening visits and track patients' progress. Data can be: Viewed Sorted Printed Filed	Patient information is packaged and delivered more completely and accurately as a result of automated editing. Improved patient compliance with self-care practices. Fewer unnecessary visits
Usage Statistics	
Reports are provided to the practice on patient usage including most popular functions	Statistics received can be used to optimize services offered through the Internet.

Further, the system offers information in essentially real-time since the system can be routinely updated at the end of each day of patient visits.

III. Design Specification for the ePPi System

The ePPi system presents its Patient View and Practice View by means of a database-backed Internet application running on a Web server. In the preferred embodiment, the database management system is Microsoft SQL Server, and the Web server is Internet Information Server (IIS) with additional enhanced features provided by Site Server; all of these programs are the product of Microsoft Corp. and they feature a high degree of interoperability. The preferred development tools and languages include Microsoft's Active Server Pages (ASP), with programming logic scripted in VBscript and JavaScript.

The reminder of this section III provides detailed descriptions of how the inventors have used the preferred platform (database server, Web server, and development tools) to realize the functionality of the ePPi system. In light of these descriptions, developers who are knowledgeable in the art can, without undue effort, also implement the ePPi Patient View and Practice View using known alternative database and Web server technologies, in combination with known alternative development tools and programming languages.

A. Shared Pages and Components

Microsoft's ASP technology permits the developer to embed extensive logic within each document on the Web server. The IIS Web server reads and interprets the scripted logic, strips out the script statements, and delivers an HTML formatted document to the requesting Web browser. The ASP technology includes the ability to dynamically alter the final content of the document that is delivered, based on information stored in a database, as well as information collected from the user during the current Web session.

In the preferred embodiment of the invention, much of the core functionality of the Patient View and the Practice View is implemented within ASP pages corresponding to each function. The logic that is scripted in each page, as well as the data and relationships that reside within the database, permit the ePPi to dynamically assemble and deliver custom content into these ASP pages, uniquely for the user who is requesting the document.

For example, a page that displays a list of upcoming appointments for the current user need only be developed once, with scripted logic to retrieve the user-specific list of appointments from the database. The list is then presented as part of the formatted HTML document that is sent to the patient user's Web browser.

Furthermore, the overall "look and feel" of the page—the colors, fonts, and graphical elements that constitute the "branding" of the site based on the specific practice's preferences—can be applied dynamically to the page when it is delivered to the user's Web browser. The branding of the site makes it unique and identifiable to the practice.

By recognizing the differences among (1) core functionality within the Patient View or Practice View; (2) patient-specific information that can be dynamically retrieved from the database; and (3) practice-specific branding that can be applied when the page is delivered, many of the Web pages that deliver core features and functionality within the Patient View and Practice View are implemented only once, yet they look different depending on the practice, and on the user.

These "shared" pages reside, in the preferred embodiment of the invention, within a specific directory on the Web server that is accessible no matter which practice's web site is being presented. Additional shared components that may be needed by developers knowledgeable in the art—for example, server-side "include" files, and COM components, likewise reside in this Shared directory or in logical subdirectories.

B. Web Site Domain

Each "registered practice" or "customer" (clinic, large practice, collection of small practices, etc.) in the ePPi system has a logically distinct web site. Multiple web sites might co-exist on the same server, or a single site might reside on its own server.

As used in the preferred embodiment of the invention, the term "Customer Domain" refers to the logical collection of web pages that presents a particular registered practice's content, and also to the corresponding physical subdirectories and files that constitute the HTML and Active Server Pages(ASP), and any component objects used therein.

Although much of the core functionality of the ePPi Patient View and Practice View can be implemented in

shared ASP pages using scripted logic, there is certain content for each practice that is totally unique to that practice, and that is static (i.e., does not change depending on the user who is requesting the document). For example, a page might contain photographs of a doctor's office, address/phone information, driving directions and a map. Such a page is best implemented as a static HTML document within the Customer Domain, rather than as a dynamic ASP document in the Shared area.

In the preferred embodiment of the invention, the Customer Domain is organized into subdirectories as follows:

/Content

The Content subdirectory contains individual HTML document page files that contain content about the practice. Certain "standard" files may exist for a practice, using default names, as defined in the Feature-Function Catalog (detailed below). However, any page may reside in the Content subdirectory, having any name; these pages could be accessible via hyperlinks on other pages, or via hyperlinks on the navigation menu as defined in the Feature-Function Catalog for the practice.

The Content subdirectory may contain additional subdirectories of its own, in order to logically group pages of a particular content type. Such grouping is entirely discretionary. For example, a separate HTML page could be formatted to describe each doctor within a practice (containing a biography, photograph, etc.). For a practice with a large number of physicians, these staff pages could be stored within a Staff subdirectory below the Content subdirectory.

/Content/Images

At a minimum, each Customer Domain uses a /Content/Images subdirectory where image files reside that are embedded in the practice's static content pages. Interactive forms that involve customization on a per-practice basis are grouped together in a special directory within the Customer Domain.

/Forms

Some form pages are used for standard features within the ePPi Patient View, such as requesting an appointment. Others are used to provide functionality unique to the practice, such as a form for gathering particular details about a patient's medical history.

C. Overall Practice Site's Look and Feel

The ePPi user interface design objectives are targeted at users who are patients, who are somewhat familiar with using a computer and an Internet browser, but who otherwise do not have extensive computer usage experience. In the Patient View, all pages within a particular Customer Domain exhibit a consistent "look and feel," which may or may not be commercially recognized or "branded."

In the preferred embodiment of the invention, HTML frames are'used to partition each page into standard and dynamic regions (see, e.g., FIG. **4**). The use of frames results in faster overall response to document requests from the user's Internet browser, because portions of the screen that are static (such as the menu of navigation links, the practice logo, etc.) do not need to be re-sent from the Web server; only the new content information frame needs to be generated.

The basic screen layout, using 5 HTML "frames" is set forth in FIG. **4**. The top portion of the screen contains a frame with a set of standard navigation hyperlinks such as "Home Page," "Login," "Help," etc. The practice logo and name may also appear in the top frame, based on the practice branding options.

The left portion of the screen contains a frame with a scrollable list of hyperlinks, each corresponding to a feature of the ePPi Patient View. The exact contents of the navigation menu depend on how the Feature-Function Catalog has been configured for the practice. The left frame can also contain a practice logo, or other text and graphics, based on the practice branding options.

Just below the top frame, a horizontal "divider" frame can be defined to provide spacing or a border between the top navigation area and the main content area. Likewise, a vertical "divider" frame next to the left navigation frame can also be defined.

The remaining portion of the screen (representing the bulk of the page "real estate") contains the content for the currently selected feature from the navigation menu (or subsequent page if the user clicked a hyperlink inside another content page). Thus, at any given time, the main content frame may be displaying a static HTML page (from the Customer Domain subdirectories), a dynamic ASP page (from the Shared subdirectories), or possibly even an external page, not even hosted at nor served by the ePPi Web server.

When a user is viewing pages from the Customer Domain, or shared dynamic ASP pages, they must be presented with a consistent "look and feel" that must coordinate with the way that the top and left frame are displayed. Text font and colors, background colors, graphical elements, and the like, are all coordinated. Collectively, these elements and stylistic decisions constitute the site "branding" options for the practice.

Graphical elements that appear in the top and left frames or on shared ASP pages can be made different for each practice by observing consistent naming conventions. For example, a file called "LOGO.GIF" located in the same subdirectory of each practice's Customer Domain can be referenced from any shared page. Each copy of the file is different because it contains the graphical logo for the corresponding practice, but the name is always the same. Consequently, the proper practice's logo appears on the shared page, regardless of which practice Web site is visited.

All such practice-specific graphical elements are grouped under a specifically named subdirectory within the Customer Domain:

/Theme/Elements

In addition to the practice logo, other examples of such graphical elements include form buttons (such as "Login," "Sign Up," "Preview", navigation buttons ("Go to Top of Page", indicators ("New," "Recommended by Your Doctor" and any other graphical elements that may be defined for use on shared pages. By making them configurable for each practice, they can be color- and theme-coordinated with the overall look and feel of the site for each particular practice.

In addition to the graphical elements that may be different from one practice to another, the selections of colors, page backgrounds, fonts, etc. are also configurable per practice. In the preferred embodiment of the ePPi, the inventors have elected to utilize linked style sheets in all static pages (residing within the Customer Domain) as well as all dynamic ASP pages (residing within the Shared directory). The linked style sheet has the name STYLE.CSS and is present in the following subdirectory within each Customer Domain:

/Theme/Style

By "style sheet" is meant a file or form that defines the layout of a document, in which parameters, such as the

page size, margins and fonts are specified. Style sheets are useful because the same style sheet can be applied to many documents. Practices can even elect to alter their overall look and feel at different times of the year (e.g., the holiday season) in order to keep their patients' interactive experience fresh and interesting. Style sheets may be "embedded" or "linked." A "linked" style sheet is a separate, self-contained file containing all of the style definitions. Practices electing to use different styles on their Web pages merely reference the style sheet file name (link to it). Thus, with essentially no effort, a change in the style sheet is immediately and automatically reflected in all pages that link to the style sheet.

Using a style sheet makes it possible to configure virtually all visual aspects of the fonts, colors, and backgrounds, as well as hyperlink colors and "rollover" behavior, independently in each of the frames that make up the page layout. However, developers reasonably skilled in the art can also use known alternative approaches for dynamically establishing branding of the site for each practice.

D. Feature-Function Catalog

The ePPi Patient View includes many features for provider-patient interaction; however, not every practice will necessarily want to offer all features to its patients. Furthermore, practices may wish to change the labeling of their selected features in the navigation menu, and also offer additional unique features in the menu, such as links to statically maintained pages. To provide the required level of flexibility in the configuration for each practice, the ePPi uses a Feature-Function Catalog, whereby the behavior of each practice's menu is configured.

An effective analogy for the Feature-Function Catalog is a library "Dewey Decimal System" for classifying books. Categories and sub-categories of book subjects are defined using a standard numerical system. A specific library (a Customer Domain) will choose to stock certain books, and may choose to include or exclude specific categories or sub-categories. A patron of the library (or a patient who accesses an ePPi web site) can access books in any of the categories offered by the library, but does not see the categories which the library chooses not to offer.

The Catalog is defined with various default values, corresponding to commonly used features within the ePPi Patient View, in order to make the configuration easy when a practice site is set up. However, any attribute of any feature within the Catalog may be overridden, and entirely new custom features may be defined for a specific practice and intermixed with the "standard" features within the menu.

For each Feature, the Catalog defines, at a minimum, the following attributes:

- the unique "Catalog ID" for the feature;
- the text or graphical label that appears in the menu;
- the text that appears at the top of the page when the menu item is clicked and the page is displayed;
- the location (Shared, Customer Domain Content, Customer Domain Form, External);
- the actual file name of the HTML document or ASP dynamic page that is delivered to the Web browser when the user clicks the menu label; and
- whether to display the page using standard HTTP or HTTPS (secure socket layer—SSL).

By convention, all features in the Patient View that involve the display of patient-specific information are configured in the Catalog as SECURE pages. Because SSL involves extra overhead, it is best to use it only when needed; thus, the static HTML pages in the Customer Domain are configured by default for non-secure display. However, the security attribute, like all others, is independently configured for each feature in the Catalog.

Catalog ID's are 6-digit values and are grouped into "families" with default menu labels, according to the first 3 digits, as follows:

- 001xxx are features relating to the PRACTICE information, such as staff listing, and office locations
- 002xxx are features relating to the specific PATIENT who is logged in, such as upcoming appointments and requesting prescription renewals
- 900xxx to 999xxx are set aside and may be used to define any arbitrary group for a particular practice

As features and functionality are added to the ePPi Patient View, additional Catalog ID's are defined within the 001 (practice) family and the 002 (patient) family, and additional families are also defined.

Within each feature family, the last 3 digits of the Catalog ID define the actual feature, and entries 001900 to 001999 and 002900 to 002999 are set aside and may be used to define any arbitrary individual feature for a particular practice.

Features that are pre-defined with default values in the Catalog may be used without the need to override any of the attributes. If desired, individual attributes of any Feature may be overridden without the need to explicitly define ALL of the attributes of that feature. Furthermore, entirely new features can be defined for any practice, by using Catalog ID numbers that have been "reserved" for this purpose.

Once the desired Features have been determined, and any default overrides have been specified, the menu for a practice Web site can be completely specified simply by editing the practice configuration file to specify the feature family (ies) that are desired, and the specific feature(s) within each family.

As an example, Table 3 shows a subset of the default Feature-Function Catalog.

TABLE 3

A Subset of the Default Feature-Function Catalog.

Catalog ID	Menu Label	Page Title	Location	Page File	Security
001xxx	Practice Info	n/a	n/a	n/a	n/a
001004	Staff	Doctors and Nurses	CONTENT	docnur.htm	no
001005	Q and A	Frequently Asked Questions	SHARED	pcontent.asp?type=5	no
002xxx	My Information	n/a	n/a	n/a	n/a
002006	Request Appt	Request Appointment	FORMS	requestappt.asp	yes
002008	My Interests	Areas of Interest	SHARED	articles.asp	yes
002011	Ask a Question	Ask a Question	SHARED	myquestions.asp	yes

A particular practice could be configured to offer all of these features in its menu, using all of the default values, simply by specifying, for example, the following settings in the practice configuration file:

TOPICFAMILIES=002,001

TOPICS002=008,006,011

TOPICS001=004,005

With only those 3 lines in the practice configuration file, the practice Web site menu appears as follows (note the hierarchical nested grouping of features into their families):

My Information
My Interests
Request Appt
Ask a Question
Practice Info
Staff
Q and A

On the other hand, the practice configuration file may be edited to contain, for example, the following settings:

TOPICFAMILIES=002,001
TOPICS002=008,006,011
TOPICS001=004,005,901
Label200=About Me
Label001=About My Doctor
Label002006=I Need an Appt
Label002011=I Have a Question
Label001901=Employment
LocationCode001901=EXTERNAL
Page001901=www.someotherplace.com/employment.html

The effect is that a new practice-specific feature is added using a reserved Catalog ID, and some of the "default" settings of the standard Catalog entries are overridden. Consequently, the practice Web site menu then appears as follows:

About Me
My Interests
I Need an Appt
I Have a Question
About My Doctor
Staff
Q and A
Employment

E. Security Features p Much of the content presented through the Web interface relates directly to the patient's medical situation, and as personal information, must be handled as secure data. Specifically, a patient's past visits, upcoming appointments, prescription list, form-fill data, and selection of areas of interested are considered confidential. By default, all Features within the PATIENT family of the Catalog (002xxx) are accessed using a secure, encrypted connection, although the secure connection is not necessary for accessing other areas of the site, since the other areas are more generic in nature. As the patient navigates into, or out of, the features in the 002 family, the server initiates or terminates secure connections. The patient's Web browser may provide feedback to the patient when this happens, depending on the run-time options of the browser. However, the overall experience to the patient is much the same as ordering or purchasing an Internet-based product or service using a credit card using known procedures.

The nature of the Internet makes it possible for any individual to access any Web site, provided they know the URL of the Web site. The ePPi Web server displays any non-secure page (as defined in the Catalog for the practice) to any user who accesses the practice site. It is not necessary for a user to "login" to the Web site in order to view information, such as practice office hours and locations.

For patient-specific content, the ePPi Web server must know the identity of the patient in order to customize the content presented. A login page is presented, where the patient enters his/her name and password. The login page includes a "remember my password" checkbox, which stores the password on the patient's computer in a "cookie" file. Persistent Client State Cookies ("cookie") refers to a file stored on the patient's computer, which contains state information, such as user names, preferences, or a unique member identification code.

As described above, however, an exception to the strict security rules applies to families, wherein the application security is expanded to address family relationships. As a result, a parent can view the appointment and prescription information for his/her child.

In order to validate a patient's login attempt, the user's name and password must exist in the ePPi database. Patients may fill in a sign-up form that is accessible via a hyperlink from the top frame. The form requires that the patient supply various demographic information, to including, but not limited to, his/her e-mail address, social security number, and medical record or other unique identifying number.

Once the user has entered the required information, the ePPi checks for the existence of the patient in a "repository" population table. The repository is populated through the periodic receipt of data files from the practice's office management systems (POMS), described in a subsequent section below.

If the user's two unique identifiers (e.g., social security number and one other) both match a record in the repository, the ePPi automatically assigns the user a unique user name and password, and sends a "welcome on-line" e-mail message to the user with instructions for first-time login. The ePPi also activates any upcoming or prior appointment information in the repository, so that even upon their first login, the patient sees customized content based on his/her visits to his/her own doctor's practice.

If an exact match cannot be found for the user who has signed up, the information collected from the sign up form is held in an exception list. Then, an administrator at the practice has the ability to manually review the list and either validate or reject the sign up request, via the ePPi Practice View.

F. Database Architecture and Schema for Dynamic Data

The schema diagram shown in FIG. **5** depicts tables resident in the ePPi database, and the explicit relationships between the tables. The tables can be grouped into the following conceptual categories corresponding to various core elements of the ePPi functionality. Some tables serve multiple functional purposes, and are therefore included in multiple categories.

1. Practice Subsystem

The Practice Subsystem of the ePPi database maintains information about each practice, including practice-specific preferences. The tables involved in this subsystem include:

Practices, PracticePreferences (basic information about the practice, such as its name; the preferences can affect a variety of run-time behavior and are stored in a table for extensibility without the need to alter the database schema);

Locations, PracticeLocation (information about each different geographic practice office location);

PracticeDataFormats (practice-specific data format information);

PracticePatient (mapping of users in the User Subsystem who are patients of the practice or, in the case of pediatric and other guardian/relation practices, responsible parties of patients of the practice);

Pharmacies (listing of pharmacies in the area served by the practice);

Doctors, DoctorPractice (listing of doctors associated with a practice, and their codes in the practice's scheduling and billing system(s));

Drugs (links to content items relating to drugs that the practice specifically wants to let patients learn about);

Immunizations (practice-specific immunization schedule with links to content items about each vaccine);

PracticeContent, TopicTypes (links to content items for practice-specific frequently asked questions, news items, recommended links, and health topic search mechanism);

AppointmentInstructions, DiagnosticCodes, ProcedureCodes (links to practice-specific content items relating to pre-visit appointment type codes and post-visit billing codes);

DiagnosticCodeLinks, ProcedureCodeLinks (links to interests that can be directed to patients as recommended reading based on their post-visit billing codes);

PracticeForms, FormResponses, FormData (information collected from users via on-line form in the practice Web site); and

PatientRepository, AppointmentRepository, VisitRepository (list of users who are permitted to sign up to use the practice Web site, and their known upcoming and prior visits).

2. Content Subsystem

The Content Subsystem is the central store of all practice-specific and generic content that is displayed to the user based on practice-specific links and patient-specific episodes.

Contents (the main index of content; each entry can include the content itself if it is small, or a pointer to the content if it is large or hosted on an external Web site);

Articles, ArticleInterests, ArticleSubInterests, Interests, Interests_SubInterests, Categories (index of healthcare articles that users can read, catalogued to permit selection based on user interests that are specified explicitly by the user or automatically to drive recommended reading based on user visits); and

Glossary (glossary of healthcare terms that can be searched by users).

3. User Subsystem

The User Subsystem stores information about each user, including their preferences, interests, and episodes relating to the practice.

Users, Roles, Relations (user names, password, demographic details, role-based access rights to features within the ePPi system, and parent/child or other guardian-type relationships);

Preferences, UserPreferences (the preferences can affect a variety of run-time behavior and are stored in a table for extensibility without the need to alter the database schema);

UserInterests (mapping of interests selected by the user manually or automatically added as recommended reading);

ActiveVisits, ActiveAppointments, PatientLinks (episode information: upcoming appointments and prior visits received from the practice scheduling and billing systems);

Notifications (record of all notifications sent out to patients, including initial welcome message, appointment reminders, and all alerts that there is new personal information on the practice Web site for them); and

UserCookies, UserActivity (links used to relate user demographic and activity information with Site Server logs).

4. User Event Subsystem

The User Event Subsystem records event-related data that may be entered by the user or received through an interface from the practice or other source.

Events, EventTypes (basic list of all user-specific events);

Prescriptions (current or archived medication that the user is taking or has taken, with start and end dates);

Illnesses (list of illnesses with onset and end dates);

Vaccinations (dates when the user received various vaccinations);

Measurements (measurements such as height, weight, and head circumference, with the date of recording); and

GrowthChartBaselines (percentile baselines used to produce graphs of individual patient measurements).

5. User Request Subsystem

The User Request Subsystem tracks the details and status of all fulfillment requests entered by the users, which the practice responds to via the ePPi Practice View.

FulfillmentRequests (central tracking table of all requests);

Refills (details of prescription renewal requests);

Appointments (details of new appointment requests);

Questions, QuestionText, Answers, AnswerText (details of questions entered by patients); and

Registrations (details of sign-up requests).

6. POMS Interface Subsystem

The following tables support the loading of episode data received by the POMSSweeper program from practice scheduling and billing systems.

Interfaces, PracticeInterfaces, POMSDefaults.

7. Content Update Support

The following tables support the automatic processing of scheduled periodic updates from third party licensors of healthcare content contained within the ePPi database. This section of the database is extensible to support licensing arrangements with additional content providers.

ContentProviders, Content_topic;

HWxxxx, tmpxxxx, DrugWork (tables used to process updates from Healthwise); and

CRSxxx (tables used to process updates from Clinical Reference Systems).

8. Miscellaneous Support

The remaining tables provide miscellaneous support functions, such as analysis for customer billing and control of e-mail notification processes.

G. Database Gateway Component

In the preferred embodiment of the invention, ASP technology is used to dynamically assemble HTML documents based on content retrieved from the database regarding the current user and practice. Although it is possible to interface directly to the database from the ASP page, using actual structured query language (SQL) statements embedded in the scripted code, the inventors have implement a 3-tier architecture for its added robustness, scalability, and security. As shown in FIG. **6**, the 3-tier architecture is represented as follows: lowest tier database; middle tier=component, and top tier=ASP pages. In FIG. **6**, the Database Gateway Component acts as a pass-through interface between the ASP pages (top tier) and database management system (bottom tier). In the preferred implementation, virtually all of the program logic for database updates and retrievals resides in the database itself, using stored procedures. However, developers reasonably skilled in the art can implement the logic at any one of the 3-tiers.

H. Notifications

Among the patient-selectable preferences is the option to receive an e-mail notification whenever a new content item is added to the database. If the preference is enabled, e-mail notifications are sent to a patient based upon, for example, the following content types:

- New articles that match the patient's stated areas of interest;
- New practice-supplied content (news, frequently asked questions, hot topics); and
- New appointment or visit information received from the practice management system interfaces.

As additional features and functionality are added to the ePPi Patient View, and as the ePPi Service Center expands to accept content from additional third party content providers, the types of content updates that drive patient notifications can likewise expand.

The e-mail notification indicates that new content is available on the Web site, and includes a convenient hyperlink within the body of the message. Clicking the hyperlink invokes the patient's Internet browser, and goes directly to the practice Web site, where the patient can login in order to view his/her customized content over a secure Internet connection.

When the patient submits a form (to request an appointment or callback, pre-visit form, health tracking, etc.), the ePPi sends an e-mail message to the practice indicating that a patient request has been made. Practices can also designate the e-mail address to be used, which will generally not be that of the patient's doctor. For example, when patients call their doctor's office to ask a medical question, the question is typically fielded by a triage nurse, who consults with a doctor as needed. The ePPi permits analogous coverage designation for e-mail notifications.

I. ePPi Service Center Operations

The ePPi system Service Center exists conceptually as an "assembly line" of steps that receive and prepare content for inclusion in the ePPi system database. Once the information is in the database, the patient/practice relationships dictate which patients are permitted to see which information. Physically, the data preparation part of the Service Center can be, but need not be, co-located with the web and database servers. Final storage of formatted content can be accomplished remotely.

FIG. **7** depicts the collection of data into the ePPi Service Center from its various sources. The collection of practice-specific content occurs largely at the start of the implementation of that practice's Web site. HTML designers format the content into static HTML pages, and store them in files in the Customer Domain, as previously described. Updates to practice-specific content occur as needed (for example, when practice staff or office policies change).

Updates to third party content occur periodically, on a schedule specific to each content provider. For example, one provider might send new content monthly; another might send it quarterly. Due to the predictable nature of these content updates, a parsing program can be constructed for each content provider, to filter the received content, evaluate the changes, and update the ePPi database automatically.

To handle the collection of patient-specific episodic information that drives customization of content to the patients, a dedicated program called the POMSSweeper checks ("sweeps") designated folders on the ePPi Service Center server(s) for data files and reports that have arrived from the Practice Office Management Systems (POMS)—the scheduling and billing systems of the various practices. The files arrive via e-mail or FTP (File Transfer Protocol) or any other transport mechanism which can place them into a designated folder on one of servers in the ePPi Service Center. The file transfers can occur daily, or more frequently if the practice desires.

The POMSSweeper program is designed in a modular architecture so that a variety of file and report formats (the output of the various POMS systems) can all be supported. As illustrated in FIG. **8**, the architecture involves two basic components: a master control portion and a plug-in. A different plug-in corresponds to each file or report format (FIG. **8**).

The master control portion of the POMSSweeper program contains the logic for sweeping the folders and identifying the source of the file transmission (client practice and POMS vendor). From this information, it makes the determination of which plug-in(s) to use to parse the file(s) as shown in FIG. **8**.

After loading the proper plug-in, the master control portion makes iterative requests of the plug-in to provide data records in an established, generic format. Vendor-specific format details of the files and reports are totally transparent to the master control portion of the program. Thus, elements such as header records and trailer records are handled by the plug-in for that file type, and are not "seen" in their native form by the master control portion.

The master control portion accepts each transaction record from the plug-in and stores it in the ePPi database, where triggers and stored procedures realize the mapping of practice-specific or licensed third-party content to the individual patients.

In the initial embodiment of the invention, the following types of episodes or transactions are handled:

- REG: a patient demographic record that populates the Repository table in the database to facilitate subsequent validation of the patient's sign-up (REGistration) request;
- APPT: an APPoinTment that has been added, changed, or deleted for a patient to facilitate delivery of visit-specific content to the patient, as well as reminders of upcoming appointments; and
- TRAN: a post-visit TRANsaction report from the practice's billing system, containing industry standard ICD-9 and CPT-4 codes as used for insurance billing to facilitate delivery of post-visit instructions and recommended reading to the patient.

To support additional personalization, customization, and narrowcast of content to individual patients, additional types of transactions can be defined in the future, and are considered part of the original invention.

The logical processing applied by the master control portion for the three representative transaction types is illustrated in FIGS. **9** and **10**, wherein FIG. **9** depicts the Appointment/Registration sweep, and FIG. **10** depicts the Transactional sweep. It should be noted that date is optional and when it is available, it only provides a context for the occurrence of the procedures and diagnoses.

The REG and APPT processing is identical because the patient population defined for registration validation purposes is based on the existence of appointment records for patients over an extended period. Furthermore, future appointments for the patient are kept in the Repository until the patient actually registers, so that customization of content occurs from the patient's very first login. Thus, the REG and APPT record formats can be identical.

In order to support multiple plug-ins for different file and report formats, the master control portion depends upon a class that is dynamically loaded and conforms to the specific

object-oriented program interface. Through this object-oriented interface, the master control portion expects the plug-in to be able to supply the following six record types. Note that the information need not exist per se as a fixed field record in the file; it is the specific responsibility of the plug-in to return the record to the master control portion of the POMSSweeper in accordance with the class interface. This provides maximum flexibility in file and report formats; it is the plug-in that actually parses the report. Although the term "record" is used throughout this description, it is not intended to mean a physical record. The records could be created on the fly from a file that does not have the same structure as the required record. Any structure is suitable as long as it can be converted to the specified interface requirements.

The "system record" is responsible for initializing the data file. The properties are the FileSize and IFFile. The "FileSize" property is used to get the file size, and in conjunction with the average record size specified in a configuration file, to provide progress feedback through the application. The "IFFile" property is used to specify the file that contains the information. "NextRecord" is the method used to get to the next record of the data file.

All subsequent records contain the methods: IsLastRecord, NextRecord, RecordCount, and RecType. "IsLastRecord" determines if the end of the datafile has been reached. "NextRecord" moves the file cursor to the next record. "RecordCount" determines the cursor location and is used for determining application feedback. "RecType" returns a record type that must match a set of know record types for the current plug-in, as defined in a configuration file.

The first record after the system record is the header. This record has information that tags the report. For example, the report title, report version, and vendor could be used to verify the authenticity of the report. The plug-in can validate information at this point, and raise an exception to the sweep application in the event of failure. All reports can have only one header record.

The next record type is the patient. It supplies a context for following records. The property of"UPID" is the unique user identification number. The "SSN" is the social security number. Until a new patient record is found, the appointment and visit records will reference this patient within the sweep application.

The next record type is the appointment type. The "ApptStatus" property conveys the type of appointment activity. The type of appointment indicates if the appointment should be added or removed from the patient's scheduled appointments. This must also be coordinated with the list of appointment types for the current plug-in, as defined in a configuration file. The UPIN is the unique identifier for the physician associated with the appointment. The "ApptDate" is the date of the appointment. The "VisitType" and "VisitDes" are the reason codes and description for the appointment.

The next record type is the visit record. It is responsible for information about procedures or diagnoses that have occurred. The context of the visit is determined from the most recent patient record. Optionally, an appointment record may precede the visit record to determine when the procedure or diagnosis was made. The "DiagCode" property is a "comma delimited" list of diagnostic codes. The ProcCode is a comma delimited list of procedure codes. A "comma delimited" record is a layout that separates data fields with a comma and usually surrounds character data with quotes. The UPIN remains the unique physician's identifier number.

The final object type is the trailer record. Only one should exist, and it should be at the end of the report. It can be used to determine if the entire report was transferred. As with any of the objects, any integrity problems can be communicated to the sweep application by raising an error. The objects and application of a Plug-In are shown in FIG. **11** (a generic Plug-In) and FIG. **12** (the Plug-In used in the ePPi system for the exemplary FAHC test site). When compared with the generic Plug-In of FIG. **11**, it is apparent that the Plug-In in FIG. **12** contains annotations regarding some of the business rules that were used to process the FAHC report. It further demonstrates the simplicity with which the ePPi system can be adapted by one of ordinary skill in the art for other practices and providers.

The sweep application handles all errors provided by the plug-in by trapping the error and logging the problem. Since this is a server application, every effort is made to recover from every error without disabling the application. The logged error is followed by a call to FindNextPatient. "FindNextPatient" tries to recover the error by looking for the first record that begins with a patient record type.

The database calls use a component that returns specific errors. Some errors are expected, such as duplicate patient records. Trapping these errors does not indicate a real error that requires a recovery.

There are two configuration files that drive the sweep application. The "POMSSweep" initialization file is used to point to the .INI file that contains the application. The design of pointing to another .INI file allows sharing of settings and load balancing of a sweep running on a different machine.

An example of the local initilization (.INI) file is:

```
[General]
MasterIniLocation=
  "K:\Work\POMSShared\MASTERPOMS. ini"
```

An example of the working initialization file appears, as follows:

```
[General]
ForwardRecipient="kilsen@eppi.com"
SweepDirectory="k:\POMS\"
;Practice Information Section
[FAHC]
Vendor="ABC"
Practice="Given Health Care"
; no spaces allowed in this list!!!
AddAptStatus="PEN,ARR,RSC"
; no spaces allowed in this list!!!
DelAptStatus="BMP,CAN,NOS"
;Title of the class to use
POMSSystem="GIVENIF32.PomsRecord"
;Recordtypes
HeadType="000"
PatType="100"
ApptType="200"
VisitType="300"
TrailType="999"
;Default Record Size
DefRecSize="152"
```

The "ForwardRecipient" is the mail address of someone who is responsible for reviewing the daily logs created by the sweep application. If an error recovery occurs, the ForwardRecipient is sent an email to check the daily log.

The "sweep directory" is the root level of the structure for the storage of the reports.

The "practice specific area," in this case "FAHC," identifies practice specific contents. This label must match the client name in the report title and the client folder in the storage structure.

The "vendor," in this case "ABC" is the creator of the POMS system that generates the reports.

The "practice" is the name of the practice that is known by the component that calls the database.

The "AddAptStatus" value is a list of appointment activity types that result in a call to the database to add an appointment to the patient's records. This value must be a comma delimited list without any spaces.

The "DelAptStatus" value is a list of appointment activity types that result in a call to the database to remove an appointment from the patient's records. This value is also a comma delimited list without any spaces.

The "POMSSystem" is the name of the class used to evaluate a report for the selected practice. It is dynamically loaded as the client of the report is determined.

The "record types" section identifies the record type values that the POMSSystem returns as the records are parsed.

The "default record size" is the most likely record length in units that are specific to the practice. It is used in conjunction with the FileSize property of the System object of the POMSSystem, and the RecordCount of all of the objects to determine the progress feedback on the user interface.

Together, the configuration file and the practice/vendor-specific plug-in enable the POMSSweeper application to read and process files from a particular POMS source. However, those files must be exported from the POMS scheduling and billing systems, according to specifications that ensure that the files can be read by the particular plug-in.

Although the initial users of the ePPi system Web site are patients, the invention is capable of, and intended to include, service to other types of users/roles, including: doctors; Practice Administrators and other administrators. Practice Administrators will have direct edit capability to post new content items directly to the database. This can be readily accomplished through the use of a form similar (or identical) to the one used for content QA review in the Service Center, but presented via the Web. The Practice Administrator can then type in (or cut and paste) the content item, title, start and end display dates, as well as identify the content item as a news item/hot topic/frequently asked question. Practice Administrators will also be able to edit and remove individual practice content items.

A similar direct entry/edit capability is possible for practice-specific instructions, drug information, and articles. In addition to providing articles for the exclusive benefit of their patients, and specialized instructions/drug information, practices also have the ability to suppress individual articles, instructions, or drug information from the ePPi general database, with or without replacement. To support this feature, a "censor" mechanism is added to the database, the Service Center, and the practice administrator feature set.

Finally, the on-going use of the Web site by large numbers of patients represents a valuable source of information for the practice. Additional procedures can analyze patient usage patterns, most commonly viewed content items, most commonly selected areas of interest, etc. This information can be compiled into a report and transmitted to the practice, or to third parties, using the same code numbers for collecting the data and same delivery mechanisms as disclosed for health tracking and other patient form data (i.e., e-mail or FAX).

The present invention is further described in the following examples. These examples are not to be construed as limiting the scope of the appended claims.

EXAMPLES

The following examples were developed through testing of the ePPi system at a selected test site (FAHC).

Example 1

The POMS Interface Specification

In this case, the plug-in and specification were developed in order to facilitate convenient extraction of data from the specific scheduling and billing systems in place at the test site. These scheduling and billing systems happened to be developed by the POMS vendor IDX Systems, Inc. Although intended to be only exemplary, subsequent practices using the POMS systems from the same provider can use the same specification to create data files that are readable by the same plug-in, a representative example of which follows:

1. In order to automate the process of populating and updating the ePPi database with patient and appointment information, the practice provided responses to the following instructions to provide the system with the necessary data to permit development of a plug-in.

To generate records of all patients having the following criteria:

The patient has appointments (future or 2 years in the past) with an ePPi registered provider.

An ePPi registered provider is one that has been defined as such in the practice system. An internal reference of patients on the practice system is also updated to keep track of the patients sent to the ePPi Service Center.

The logic searches the patient database, extracting demographic and appointment data for all patients having appointments in the future or within the past date range period with an ePPi registered provider. A date two years in the past from the current system date will default. The user can override this date. However, the date entered cannot be a future date. A file (filename to be determined) is created and placed in a specified directory. Practice personnel are responsible for getting the file to the ePPi Service Center (via FTP or e-mail).

The file contains the following records:

Header Record

Patient record (one per patient)

Appointment record (repeating, one per appointment)

2. Real-time triggers were added to the system to capture demographic updates for patients contained in the internal reference as well as appointment schedules, arrivals, cancels and reschedules. When one of the above occurs, the system checks the internal reference for the patient data. If so, the event is filed into the outbound queue. If not, and the trigger event is appointment related, the system checks to verify whether the appointment is with an ePPi registered provider. If so, the event is filed into the outbound queue and the patient added to the internal reference. If not, no event is filed.

Although the events were triggered real-time, the data is compiled, resulting in the creation of a file (filename to be determined).

The file contains the following records:

Header Record

Patient record (one per patient)

[Appointment record (one per appointment)]

3. The billing system is used to capture diagnosis and procedure code data. A process is created, which runs nightly through the day's billing records collecting charge data based upon the following criteria:

The patient is listed in the internal index, the invoice contains at least one charge transaction and the Billing Provider specified on the invoice is an ePPi registered provider.

An ePPi registered provider is one that has been defined as such in the practice system. If the patient is not in the internal index, the invoice does not contain at least one charge transaction or the Billing Provider is not an ePPi registered provider, no data for that patient invoice is captured. Once the data is collected, a file (filename to be determined) containing patient demographics, appointment information (if an appointment is linked to the invoice) and charge transaction data is created.

The file contains the following records:

Header Record

Patient record (one per patient)

[Appointment record (one per appointment)]

Transaction record (one per invoice)

Position	Description	Format
4. The Record Layouts Header Record-000		
1–3	Record type	000
4–11	Processing date	MMDDYYYY
12–61	Client name (vendor type, version)	LJBF, free text
62–150	Not used	Blank filled
Trailer Record-999		
1–3	Record type	999
4–10	Record count (total number of records including Header and Trailer)	RJZF
11–17	100 Record count (total number of patient records)	RJZF
18–24	200 Record count (total number of appointment records)	RJZF
25–31	300 Record count (total number of transaction records)	RJZF
32–150	Not used	Blank filled
Patient Record		
1–3	Record type	NNN
4–15	Unique patient identifier	LJBF
16–26	Social security number	NNN-NN-NNNN
27–34	Date of birth	MMDDYYYY
35	Gender	M, F or I
36–150	Not used	Blank filled
Appointment Record		
1–3	Record type	NNN
4–15	Unique Patient Identifier	LJBF
16–27	Appointment date/time	MMDDYYYYHHMM
28–35	Appointment Number	RJZF
36–38	Appointment Status	LJBF
39–43	Visit Type	LJBF
44–63	Visit Type Description	LJBF
64–69	Provider ID	LJBF
70–117	Provider Name	LJBF
118–150	Not used	Blank filled

-continued

Position	Description	Format
Transaction Record		
1–3	Record type	NNN
4–15	Unique Patient Identifier	LJBF
16–21	Billing Provider UPIN	LJBF
22–69	Billing Provider Name	LJBF
70-*	Header Diagnosis Codes (Dx1, Dx2, . . . , DxN);	CSV with ; at end
*	Procedure Codes (Proc1,Proc, . . . , ProcN);	CSV with ; at end

A more generic interface requirement specification follows as Example 2, which has been delivered to ePPi test client practices to facilitate their generation of files containing the REG, APPT, and TRAN information.

Example 2

ePPi/Practice Interface Specification

To automate the process of populating and updating the ePPi database with patient and appointment information, the Practice can deliver the following data:

1. A periodic (e.g., daily) file containing information about scheduled APPOINTMENTS for patients. The relevant details for each appointment include the patient identifier, the provider (doctor, etc.) identifier, the date/time, and the visit type.

2. A periodic (e.g., daily) file containing information about billing TRANSACTIONS for patient visits that have occurred. The relevant details for each transaction include the patient identifier, the provider (doctor, etc.) identifier, the date/time, the diagnosis code(s) for the visit, and the procedure code(s) for the visit.

3. A file to support the ePPi REGISTRATION process, containing information about patients of providers who are contracting to use the ePPi service, with all known upcoming appointments for those patients. This file was supplied at the start of the project, and is again provided whenever new providers are added.

The preferred delivery mechanism is FTP. Each practice is provided an FTP account and password, as well as a port number, unique to the client.

The name of the file determines the processing flow once it arrives at the ePPi Service Center. The format is: Client_InterfaceVendor_ReportType_Date, wherein the portions of the name are defined in TABLE 4 as follows:

TABLE 4

describing file naming format

File Name	Description
Client	A unique identifier for the client, as agreed to by the client and the ePPi Service Center personnel
Interface-Vendor	An identifier for the vendor of the Interface used to generate the data files, as agreed to by the client, the vendor, and the ePPi Service Center personnel
ReportType	Appts = an APPOINTMENTS file; Tran = a TRANSACTION file; Reg = a REGISTRATION file

TABLE 4-continued

describing file naming format

File Name	Description
Date	The date when the Interface created the file, in the format YYYYMMDDHHMM. This assures that the filename is unique. HH is the hour in military time, i.e., 00–23.

Each file consists of a series of fixed length records. Each record is 150 characters and is terminated by a CR/LF. The first 3 characters of each record identify the RECORD TYPE. There are five record types:

000: Header

999: Trailer

100: Patient

200: Appointment

300: Transaction

1. Header Record

The "header" is present to confirm the contents of the file. It contains the same information as the file name, as well as the version of the Interface (see TABLE 5). There can only be one header record and it must be the first one in the file.

TABLE 5

the Header Record.

Position	Description	Format
1–3	Record type	000
4–11	Processing date	YYYYMMDD
12–61	Client/Interface/ Report/Date/Version	Client_InterfaceVendor_ReportType_ Date_Version (i.e., same as file name, plus a version identifier)
62–150	Not used	Blank filled

2. Trailer Record

The "trailer" identifies the end of the file and includes checksum values that allow a validation of the number of records (see TABLE 6).

TABLE 6

the Trailer Record.

Position	Description	Format
1–3	Record type	999
4–10	Record count (total number of records including Header and Trailer)	RJZF
11–17	100 Record count (total number of patient records)	RJZF
18–24	200 Record count (total number of appointment records)	RJZF
25–31	300 Record count (total number of transaction records)	RJZF
32–150	Not used	Blank filled

3. Patient Record

The "patient record" identifies the patient context of the following records. The fields include a unique patient identifier, a secondary identifier such as social security number, the date of birth, and the gender (see TABLE 7). Subsequent records (appointments and visits) relate to this patient unless overridden by the appointment record. This identifies the new patients, as well as relate the patients to appointments and transactions.

TABLE 7

the Patient Record.

Position	Description	Format
1–3	Record type	100
4–15	Unique patient identifier	LJBF
16–26	Social security number	NNN-NN-NNNN
27–34	Date of birth	YYYYMMDD
35	Gender	M, F or I
36–150	Not used	Blank filled

4. Appointment Record

The "appointment record" identifies the time and reason for an appointment, the status, and the doctor to be seen (see TABLE 8). The status field indicates if the appointment is an additional appointment or one that should be deleted. The appointment record is generally triggered by the activity in the practice's scheduling system.

TABLE 8

the Appointment Record.

Position	Description	Format
1–3	Record type	200
4–15	Unique Patient Identifier	LJBF
16–27	Appointment date/time	YYYYMMDDHHMM
28–35	Appointment Number	RJZF
36–38	Appointment Status	LJBF
39–43	Visit Type	LJBF
44–63	Visit Type Description	LJBF
64–69	Provider ID	LJBF
70–117	Provider Name	LJBF
118–150	Not used	Blank filled

The 3-character Appointment Status ultimately indicates whether the record should be ADDED to the ePPi database, or DELETED. The actual values are configurable, and it is perfectly fine if there are multiple values that have slightly different connotations on the practice side, but which all mean the same thing to the ePPi side.

For example, BMP ("bump"), CAN ("cancel"), and NOS ("no show") could all mean DELETE.

5. Transaction Record

The "transaction record" identifies the specific diagnosis and/or procedure codes for a patient visit (see TABLE 9). The transaction record is generally triggered by the activity in the practice's billing system. Thus, it includes information about the doctor, but does not contain the details about the appointment date and time.

TABLE 9

the Transaction Record.

Position	Description	Format
1–3	Record type	300
4–15	Unique Patient Identifier	LJBF
16–21	Billing Provider UPIN	LJBF
22–69	Billing Provider Name	LJBF
70-*	Diagnosis Codes (Dx1, Dx2, . . . , DxN);	CSV with ; at end
*	Procedure Codes (Proc1, Proc, . . . , ProcN);	CSV with ; at end

The record types that are present in a file depend on the file type.

1. Appts File

The Appts file (containing patient appointment information) begins with a Header record, and ends with a

Trailer record. Patient appointments are denoted in the file by a Patient record, followed by one or more Appointment records relating to that patient. Appointments for a different patient are denoted by the presence of a different Patient record, in turn followed by one or more Appointment records.

For example:

000 (Header record)

100 (Patient record for patient A)

200 (Appointment record 1 for patient A)

200 (Appointment record 2 for patient A)

100 (Patient record for patient B)

200 (Appointment record 1 for patient B)

100 (Patient record for patient C)

200 (Appointment record 1 for patient C)

999 (Trailer record)

2. Tran File

The Tran file (containing transaction information from the billing system, including diagnostic and procedure codes) begins with a Header record, and ends with a Trailer record. Patient visits transactions are denoted in the file by a Patient record, optionally followed by an Appointment record, which is then followed by a Transaction record. Although it is common for an Appointment record to be present, it is not mandatory (some transactions triggered by the practice billing system may not necessarily have an associated appointment).

For example:

000 (Header record)

100 (Patient record for patient A)

200 (Appointment record 1 for patient A)

300 (Transaction record for patient A, appointment 1)

200 (Appointment record 2 for patient A)

300 (Transaction record for patient A, appointment 2)

100 (Patient record for patient B)

300 (Transaction record 1 for patient B; no appointment details)

300 (Transaction record 2 for patient B; no appointment details)

999 (Trailer record)

3. Reg File

The Reg file (used to support the registration process) begins with a Header record, and ends with a Trailer record. A Patient record is present for each patient; these patients are deemed "permitted" to use the ePPi system by virtue of their doctor's identity. Optionally, a Patient record may also be followed by one or more Appointment records. If present, the details of these appointments are stored in a repository until the patient first signs on to the ePPi system, at which time their upcoming appointments are moved to the "active" database and shown on his/her personal web page.

For example

000 (Header record)

100 (Patient record for patient A)

100 (Patient record for patient B)

200 (Appointment record 1 for patient B)

200 (Appointment record 2 for patient B)

200 (Appointment record 3 for patient B)

200 (Appointment record 4 for patient B)

200 (Appointment record 5 for patient B)

100 (Patient record for patient C)

999 (Trailer record)

4. Interface Logic: Identification of ePPi Registered Providers

At a practice with many providers, not all of the providers necessarily participate in the ePPi online service. A mechanism must be put in place to identify which providers are participating. The ePPi Service Center requires a list from each group practice to supply the unique provider numbers for all such providers within the practice.

From time to time, new providers might need to be added to this list. For example, another office location might begin to participate, requiring that all providers at that location be added. Or, a new provider might join the practice and need to be added individually.

Whenever new providers are added, in addition to the identification of the provider(s), a new Reg file is generated for the patients of those providers.

5. Selection of Patients for the Reg File

A filter is used to determine the patients of a provider or a subset of providers in order to build the Reg file. The preferred filter criteria are:

The patient has future appointments scheduled with the provider

OR

The patient has had an appointment with the provider within the last 2 years.

6. Internal Reference of ePPi Patients

Once a patient has been selected for inclusion in a Reg file, that patient is included in an internal reference. Subsequently, the appointment and billing activity can be checked against that reference to determine if the activity occurred for an "ePPi patient" and therefore if the records need to be sent to the ePPi Service Center.

7. Selection of Records for the Appts File

Activity in the scheduling system results in the creation of Appointment records, based on the following criteria:

The patient is in the internal reference of "ePPi Patients"

AND

The provider is an "ePPi Registered Provider."

8. Selection of Records for the Tran File

Activity in the billing system results in Transaction records being created, based on the following criteria:

The patient is in the internal reference of"ePPi Patients"

AND

The provider is an "ePPi Registered Provider."

In addition, since the purpose of sending the Tran file is to use the diagnostic and procedure codes to populate the patient's web page with relevant information, it is only logical that billing transactions containing no diagnostic or procedure codes need not be sent.

While the foregoing specification has been described with regard to certain preferred embodiments, and many details have been set forth for the purpose of illustration, it will be apparent to those skilled in the art that the invention may be subject to various modifications and additional embodiments, and that certain of the details described herein can be varied considerably without departing from the basic principles of the invention. Such modifications and additional embodiments are also intended to fall within the scope and spirit of the appended claims.

What is claimed is:

1. A method of automatically and electronically communicating between at least one health-care provider and a plurality of users serviced by the health-care provider, said method comprising the steps of:

initiating a communication by one of the plurality of users to the provider for information, wherein the provider has established a preexisting medical record for each user;

enabling communication by transporting the communication through a provider/patient interface over an electronic communication network to a Web site which is unique to the provider, whereupon the communication is automatically reformatted and processed or stored on a central server, said Web site supported by or in communication with the central server through a provider-patient interface service center;

electronically comparing content of the communication with mapped content, which has been previously provided by the provider to the central server, to formulate a response as a static or dynamic object, or a combined static and dynamic object; and

returning the response to the communication automatically to the user's computer, whereupon the response is read by the user or stored on the user's computers

said provider/patient interface providing a fully automated mechanism for generating a personalized page or area within the provider's Web site for each user serviced by the provider; and

said patient-provider interface service center for dynamically assembling and delivering custom content to said user.

2. The method of claim **1**, wherein the method is implemented by an electronic provider-patient interface system (the "ePPi system").

3. The method of claim **1**, wherein when the user's communication includes a request for information or relates to an episodic event, the method further comprises the additional step of:

notifying the provider and the user automatically that information response has been sent to the provider's and the user's computers, respectively.

4. The method of claim **1**, wherein the central server comprises: a Web server capable of responding to HTTP requests; a database server capable of maintaining complex relationships between users and information content; and a modular data collection program capable of receiving information as coded data from practices in a variety of different formats, and reformatting and storing the information.

5. The method of claim **4**, wherein the central server further comprises an electronic mailing capability to support the automated transmission of notifications to users or providers.

6. The method of claim **1**, wherein there are one or more providers, each of which is in communication with a plurality of users.

7. The method of claim **1**, wherein the communications network is either an internet or intranet network selected from the group consisting essentially of Internet, World Wide Web, telephone network, coaxial or fiber cable network, radio wave network, infrared radiation network, ATM link, FDDI link, satellite link, twisted pair fiber-optic broadcast wireless or other wireless network, LAN, WAN, and standard Ethernet link.

8. The method of claim **7**, wherein the communications network is the Internet.

9. The method of claim **1**, wherein delivery occurs over the World Wide Web.

10. The method of claim **9**, wherein the delivery is in HTML format.

11. The method of claim **1**, wherein custom content is assembled using Active Server Pages (ASP) technology.

12. The method of claim **1**, wherein the custom content is selected from a library of information, and wherein the selection is based upon specific data received from the provider about each user served by the provider.

13. The method of claim **12**, wherein the data about each user comprises information about each user's visits to the provider.

14. The method of claim **12**, wherein the selection is based upon logical mappings that reside in a database server capable of maintaining complex relationships.

15. The method of claim **1**, further comprising a unique provider's Web site for each of the one or more providers, wherein each Web site is supported by or in communication with the central server through the Service Center.

16. The method of claim **1**, wherein at least one provider's Web site and at least one user's computer are hyperlinked through the provider/patient interface.

17. The method of claim **1**, wherein communications, requests, notifications and submissions of information from one or more providers and from the users of the electronic communications system are in standardized formats.

18. The method of claim **17**, wherein the standardized formats are derived from standard administrative and billing codes used by the provider.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 6,757,898 B1
APPLICATION NO. : 09/484550
DATED : June 29, 2004
INVENTOR(S) : Ilsen et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 13,
Line 10, "development tools could include CGI, Pert, Java, TCL, and" should read --development tools could include CGI, Perl, Java, TCL, and--.

Column 14,
Line 10, "branding options,for the practice Web site, and transmits the" should read --branding options for the practice Web site, and transmits the--.

Column 17,
Line 31, "ePPi "link libraries" automatically deliver content to each" should read --ePPi "link libraries") automatically deliver content to each--.

Column 20,
Line 57, "TABLE 1, the Patient View component: allows patients to" should read --TABLE 1, the Patient View component allows patients to--.

Column 26,
Lines 46, 47, 48, 49, "graphical elements include form buttons (such as "Login," "Sign Up," "Preview", navigation buttons ("Go to Top of Page", indicators ("New," "Recommended by Your Doctor" and any other graphical" should read --graphical elements include form buttons (such as "Login," "Sign Up," "Preview"), navigation buttons ("Go to Top of Page"), indicators ("New," "Recommended by Your Doctor") and any other graphical--.

Column 29,
Line 36, "E. Security Features p Much of the content presented" should read
--E. Security Features
Much of the content presented--
(Note that a hard new-line was omitted, and instead a letter "p" was inserted.)

Column 30,
Line 13, "various demographic information, to including, but not" should read --various demographic information, including, but not--.

Column 32,
Lines 59-60, "as follows: lowest tier database; middle tier=component, and top tier=ASP pages." should read --as follows: lowest tier=database; middle tier=component, and top tier=ASP pages.--.

UNITED STATES PATENT AND TRADEMARK OFFICE

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INVENTOR(S) : Ilsen et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

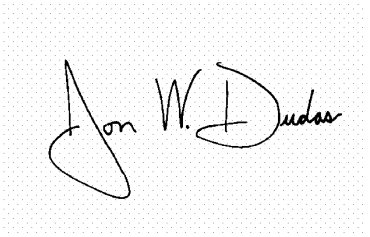
Column 39,
Line 30, the section title "4. The Record Layouts" appears inside the table. It should appear BEFORE the table (i.e., above the column headings).

Column 45,
Line 16, "read by the user or stored on the user's computers" should read --read by the user or stored on the user's computer,--.

Column 46,
Line 34, "claim 1" should read --claim 15--.

Signed and Sealed this

Twentieth Day of February, 2007



JON W. DUDAS
Director of the United States Patent and Trademark Office

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF GEORGIA
ATLANTA DIVISION

MCKESSON INFORMATION SOLUTIONS LLC, Plaintiff, v. EPIC SYSTEMS CORPORATION. Defendant.	CIVIL CASE NO. 1:06-CV-2965-JTC

O R D E R

This matter is currently before the Court on Defendant's motion for summary judgment of noninfringement [#114]. Defendant moves for summary judgment on Plaintiff's claims of patent infringement on the basis that the entities using its accused software do not perform all elements of the patent-in-suit, and, therefore, Defendant cannot have infringed that patent. The Court disagrees and **DENIES** Defendant's motion [#114].

I. Background

The technology at issue in this patent infringement action involves a method for a health-care provider and a patient to communicate automatically and electronically with each other. The patent-in-suit is U.S. Patent No. 6,757,898 ("the '898 patent"), owned by Plaintiff McKesson Information Solutions LLC. The allegedly infringing product is MyChart, a health-care information software product made and sold by Defendant Epic

Systems Corporation.

A. The '898 Patent

The '898 patent relates to "an automated system of electronic communications between a health-care or medical service provider and his/her patient, for the purpose of providing a simple, reliable and effective interface for rapidly exchanging inquiries, responses, data, services and information between [] both parties for the mutual benefit and satisfaction of each." '898 patent, col. 1, ll. 5-13. The '898 patent contains eighteen claims. '898 patent, cols. 44-46. McKesson alleges that Epic has directly or indirectly infringed claims 1-10 and 12-18 of the '898 patent. (Def.'s Stmt. of Material Facts ("DSMF") ¶ 1; Pl.'s Resp. DSMF ¶ 1.)

The parties agree that claim 1 of the '898 patent is a method claim. (DSMF ¶ 2; Pl.'s Resp. DSMF ¶ 2.) Claim 1 recites "[a] method of automatically and electronically communicating between at least one health-care provider and a plurality of users serviced by the health-care provider . . ." '898 patent, col. 44, ll. 60-62. While the parties dispute the proper construction of some of the terms in claim 1, the parties agree that the method recited in claim 1 consists of approximately four steps. (DSMF ¶¶ 4-7; Pl.'s Resp. DSMF ¶¶ 4-7); '898 patent, col. 44, ll. 64 - col. 45, ll. 24. Those steps are as follows:

1. Claim 1 first requires the step of "initiating a communication by one of the plurality of users to the provider for information, wherein the provider has established a preexisting medical record for each user." '898 patent, col. 44, ll. 64-67; (DSMF ¶ 4; Pl.'s Resp. DSMF ¶ 4).

2. Claim 1 then requires the step of "enabling communication by transporting the communication through a provider/patient interface over an electronic communication network to a Web site which is unique to the provider, whereupon the communication is automatically reformatted and processed or stored on a central server, said Web site supported by or in communication with the central server through a provider-patient interface service center." '898 patent, col. 45, ll. 1-8; (DSMF ¶ 5; Pl.'s Resp. DSMF ¶ 5).

3. Next, Claim 1 requires the step of "electronically comparing content of the communication with mapped content, which has been previously provided by the provider to the central server, to formulate a response as a static or dynamic object, or a combined static and dynamic object; and returning the response to the communication automatically to the user's computer, whereupon the response is read by the user or stored on the user's computer." '898 patent, col. 45, ll. 9-16; (DSMF ¶ 6; Pl.'s Resp. DSMF ¶ 6).

4. Claim 1 concludes by stating "said provider/patient interface providing a fully automated mechanism for generating a personalized page or area within the provider's Web site for each user serviced by the provider." '898 patent, col. 45, ll. 17-21; (DSMF ¶ 7; Pl.'s Resp. DSMF ¶ 7).

The remaining claims of the '898 patent are dependent upon claim 1, in that they refer to and incorporate the method recited in claim 1. '898 patent, col. 45-46; (Pl.'s Claim Constr. Br. at 12; Def.'s Claim Constr. Br. at 3).

B. Defendant's Allegedly Infringing Product

MyChart is a software system that was developed by Epic. (PSMF ¶ 1;

Def.'s Resp. PSMF ¶ 1.) MyChart allows health-care providers to make medical records and other information available to users so that the users can access that information. (DSMF ¶ 8; Pl.'s Resp. DSMF ¶ 8.) Epic's MyChart software allows patients who have computer and internet access to log on to their provider's website using a unique username and password in order to access medical records and other information. (DSMF ¶ 11; Pl.'s Resp. DSMF ¶ 11.) Defendant argues that, because no single entity using its MyChart software performs every step of the method recited in claim 1 of the '898 patent, it cannot be held liable for infringement.

II. Legal Standard

Summary judgment is appropriate only when there are no genuine issues of material fact and the moving party is entitled to judgment as a matter of law. Fed. R. Civ. P. 56. The substantive law applicable to the case determines which facts are material. Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 248, 106 S. Ct. 2505, 2510 (1986). "The district court should 'resolve all reasonable doubts about the facts in favor of the non-movant,' . . . and draw 'all justifiable inferences . . . in his favor . . . .'" United States v. Four Parcels, 941 F.2d 1428, 1437 (11th Cir. 1991). The court may not weigh conflicting evidence nor make credibility determinations. Hairston v. Gainesville Sun Publ'g Co., 9 F.3d 913, 919 (11th Cir. 1993), reh'g denied, 16

F.3d 1233 (1994) (en banc).

In the context of patent infringement claims, a determination of noninfringement of a patent is a question of fact, and courts must resolve all reasonable factual inferences in favor of the patentee. IMS Tech., Inc. v. Haas Automation, Inc., 206 F.3d 1422, 1429 (Fed. Cir. 2000). To grant a motion for summary judgment of noninfringement, a court must find that "no reasonable jury could find infringement." Id.

III. Discussion

Defendant argues that, under BMC Res., Inc. v. Paymentech, L.P., 498 F.3d 1373, 1378 (Fed. Cir. 2007), it cannot be found liable for infringement of the '898 patent because: (1) the providers using its MyChart software do not perform all of the steps of the method described in claim 1 of the '898 patent; and (2) the providers do not direct or control the users of MyChart to perform any steps the providers do not perform themselves.

In BMC, the United States Court of Appeals for the Federal Circuit addressed "the proper standard for joint infringement by multiple parties of a single claim." 498 F.3d at 1378. "Direct infringement requires a party to perform or use each and every step or element of a claimed method or product." Id. (internal citations omitted). In the context of method patent claims, "infringement occurs when a party performs all of the steps of the

process." Id. at 1379. This is often referred to as the single-entity rule. However, there is an exception to this rule:

> A party cannot avoid infringement . . . by contracting out steps of a patented process to another entity. In those cases, the party in control would be liable for direct infringement. It would be unfair indeed for the mastermind in such situations to escape liability.

Id. at 1381. Thus, a party may be held liable for infringing a method patent claim when that party either performs each step of the patented method or when that party directs and controls the performance of any step of the patented method which it does not personally perform.

Step 1 of claim 1 of the '898 patent requires "initiating a communication by one of the plurality of users to the provider for information, wherein the provider has established a preexisting medical record for each user[.]" '898 patent, col. 44, ll. 64-67. Epic argues that, under BMC, it does not infringe claim 1 of the '898 patent because the MyChart users – as opposed to the providers – perform step 1 of the method. (PSMF ¶ 6; Def.'s Resp. PSMF ¶ 6.) For the following reasons, the Court finds that questions of material fact remain as to whether the providers using Epic's MyChart software direct and control the user to perform the first step of the method.

First, the method at issue in this case is distinguishable from the method at issue in BMC. The court in BMC found that the defendant did not infringe the patented method because the defendant's method required third

party debit networks and financial institutions to perform integral parts of the method. Id. at 1381-82. The first step in the allegedly infringing process in BMC required that "the customer call[] the merchant to pay a bill using an IVR." Id. at 1375. Although the accused process in BMC required a "user" to make a call to initiate the method, the court in BMC did not focus on the actions of the customer or "user." Rather, the court in BMC focused on the actions taken by the financial institutions and debit networks which were necessary steps of the method after it was initiated.

Here, once the MyChart method is initiated, the remaining steps of the method are performed by the provider. Initiating the communication is not a part of the method itself; rather, the MyChart method begins *after* the user has initiated the communication. Thus, unlike the debit networks and financial institutions in BMC, MyChart users do not perform an integral part of the method. The "user" only initiates the method, each step of which is performed by MyChart.

Even if initiation by the user is considered an integral part of the method, questions of fact remain as to whether the provider directs and controls those actions. McKesson points to the following evidence to show that providers "direct and control" users to initiate the communication[1]:

[1] Epic objects to this evidence on the grounds that it is based solely on a conclusory declaration by McKesson's expert. However, McKesson's expert states

- A user can only initiate a communication with the health-care provider via MyChart if the health-care provider creates a medical record for the user. (Pl.'s Stmt. of Facts ¶ 15.)

- A user can only initiate a communication using MyChart if the health-care provider provides the user with an access code and activate's the user's account. (Id. ¶ 16.)

- The provider directs the user to enter the user's name and password in order to log on to the website. (Id. ¶ 17.)

- A provider can change a user's password at any time. (Id. ¶ 18.)

- The provider occasionally requires the user to read and agree to terms and conditions. (Id. ¶ 19.)

- Once the health-care provider authenticates a user, it sends a "cookie" to the user's computer. This cookie generates a token that attaches to any action taken by the user. (Id. ¶¶ 20-22.)

- MyChart uses content linking, which automatically creates a query for articles of interest based upon the user's age and sex and standard industry diagnoses or medication codes. These queries are automatically generated and sent to the database by the provider, not the user. (Isbell Decl. ¶ 12(g).)

- MyChart also uses a content relevancy engine ("CRE"). The CRE compiles relevant articles based on the user's age and sex and standard industry diagnoses or medication codes and adds links to the articles on the user's home page. If the user clicks on the link, MyChart automatically initiates a communication to the providers' database for the articles which are then automatically provided to the user. (Isbell Decl. ¶ 12(h).)

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that he analyzed the MyChart source code and administrative and design documents before coming to these conclusions. (Isbell Decl. ¶ 2.) In addition, Epic failed to respond to McKesson's statement of facts with evidence from their own expert. Because the Court must view the facts in the light most favorable to McKesson, as the patentee, the Court accepts McKesson's expert's description of the MyChart software as true.

This evidence is at least sufficient to create a genuine issue of material fact as to whether in both the MyChart situation, as well as in the McKesson method, the actions of the users are directed and controlled to the point they become joint infringers.

Epic also argues that a user performs step 3 of claim 1, because after the communication is returned to the user, "the response is read by the user or stored on the user's computer." '898 patent, col. 45, ll. 9-16. However, McKesson's expert states that the responses in MyChart are automatically stored on the user's computer and "it is immaterial whether the user actually reads the responses for purposes of complying with the claim terms." (Isbell Decl. ¶ 8.) Thus, a jury could also find that the user does not perform step 3 of the method. Therefore, Defendant's motion for a summary judgment of noninfringment [#114] is **DENIED**.

IV. Claim Construction

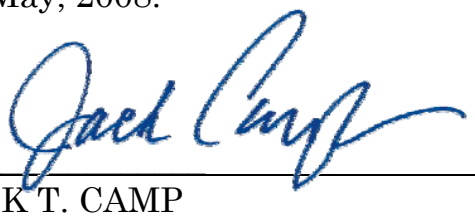
The parties have completed their claim construction briefing pursuant to Patent Local Rule 6, and this case is ripe for a Markman hearing. Therefore, the parties are **DIRECTED** to appear for a Markman hearing on Thursday, June 19, 2008 at 10:00 a.m. at the U.S. Courthouse, 75 Spring Street, Atlanta, GA, Courtroom 2106. At the hearing, the Court will hear argument and receive evidence on the parties' proposed claim constructions.

The Court will impose time limits on each party's presentation. Thus, the parties are encouraged to rely to the extent possible on documentary evidence susceptible to admission, including affidavits. In addition, each party will be limited to one expert witness, unless it can make a substantial showing that more than one expert witness is necessary. The parties are **DIRECTED** to file a summary of the testimony, intrinsic evidence, and extrinsic evidence expected to be relied upon at the hearing no later than June 12, 2008.

V. Conclusion

For the foregoing reasons, Defendant's motion for summary judgment of noninfringement [#114] is **DENIED**. In addition, Defendant's motion for leave to file excess pages [#104] is **GRANTED**, Plaintiff's motion for leave to file response under seal [#118] is **GRANTED**, and Plaintiff's motion for leave to file sur-reply [#123] is **GRANTED**. Lastly, the parties are **DIRECTED** to appear for a Markman hearing on Thursday, June 19, 2008 at 10:00 a.m., in accordance with the above directives.

SO ORDERED, this 16th day of May, 2008.



JACK T. CAMP
UNITED STATES DISTRICT JUDGE

PROOF OF SERVICE

This is to certify that I have this day served the foregoing "Opening En Banc Brief of Plaintiff-Appellant McKesson Technologies Inc." upon counsel for Defendant-Appellee, by depositing two copies of the brief with UPS for delivery to each party's counsel as follows:

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This 20th day of June 2011.

Daryl Joseffer

CERTIFICATE OF COMPLIANCE

Pursuant to Federal Rule of Appellate Procedure 32(a)(7)(C), the undersigned certifies that the foregoing brief, exclusive of the exempted portions as provided in Fed. R. App. P. 32(a)(7)(B)(iii) and Fed. Cir. R. 32(b), contains 11,929 words and therefore complies with the type-volume limitations of Fed. R. App. P. 28.1(e)(2)(A)(i).

This 20th day of June 2011.

Daryl L. Joseffer