

# **The Health Care Industry and Cyberspace: Is e-Health the next frontier?**

**By  
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Although this presentation is about the future, I think it is important that we begin by looking at the healthcare industry from the perspective of the past. So let's climb into our time machines, put them in reverse, and travel back to the year 1000 CE. Don't laugh! At least this should be easier than projecting ahead 1,000 years.

Here we are, somewhere in medieval Europe. You have broken your arm and you are waiting to see your doctor. Now we aren't in a waiting room. In fact, it looks more like we are in line outside a butcher's shop. There is a scream from inside, the doctor's assistant rushes by with a fresh bucket of leaches, and someone ahead of us faints as the doctor's healthcare administrator shouts, "Next."

While that little scene may sound more like the description of a *Saturday Night Live* sketch, it is probably no more laughable to us than the description of a visit to a 20<sup>th</sup> century doctor's office will be to our descendents in the year 3000 CE. Frankly, I doubt if even our best science fiction writers today can come close to describing what healthcare delivery will be like 1,000 years from now. Think of the changes that will take place by then, for example:

- Ray Kurzweil believes that the concept of life expectancy will be meaningless in the year 3000, for medical advances will allow 31<sup>st</sup> century humans to live indefinitely.<sup>1</sup>
- Some stem cell researchers believe that in less than 50 years we will be able to grow our own replacement organs. By the year 3,000 CE humans may be replacing body parts as readily as we change automobile parts today.
- Advances in genetics will permit parents to "design" their children's bodies, which means that healthcare administrators will be administering "pre-conceptual agreements." While you might laugh at the concept of a "pre-conceptual agreement," I am sure that the lawyers are going to find ways to cash in on genetic research too.

My point in asking you to project your mind backward and forward in time is to point out that even though the state of the healthcare industry 1,000 years from now may be too far in the future to accurately predict, some things don't change very much at their

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<sup>1</sup> Kurzweil, Ray, *The Age of Spiritual Machines*, p. 280, New York: Viking 1999.

most fundamental level. I suspect that 1,000 years ago healthcare administrators were also saying, “There *must* be a better way to run this show.” Here we are after all, 1,000 years later, still looking for better ways to administer our number one priority, staying healthy. I don’t mean to imply that we haven’t made an incredible amount of progress in the past 1,000 years, but from an administrative point of view it sometimes looks like things haven’t changed all that much. There are still long lines of sick people trying to get through the front door of their doctor’s office. And I am told that leeches are again in vogue, this time in microsurgery. But 1,000 years from now is too far in the future to project, so let’s try a more manageable time warp. This time we will only go forward 100 years in time. What can we prophesize about a visit to the doctor’s office then?

Just to make this mind game more personal, let’s assume that it is the year 2100 CE, average life expectancy is now over 120 years, and one of your grandchildren is preparing for his or her annual health examination. Since aches and pains associated with old age have long since been overcome, the healthcare providers themselves initiate visits to the doctor. Say it is a few weeks before your grandchild’s 100<sup>th</sup> birthday. It is morning, and their bathroom scale is now built into the floor so they can’t avoid it. (I wonder if 100 years from now people will still be worrying about those extra pounds.) As your grandchild steps on the scale a computerized voice says, “You need to go to your doctor’s Web site and make an appointment for your wellness critique.” Of course, your grandchild follows the *other side* of the family when it comes to procrastination and completely ignores the reminder. After a few days have gone by, however, their refrigerator refuses to open until he or she finally comes to the doctor’s “cyberoffice.”

Keep in mind that the year is now 2100 CE, and an Internet experience is considerably more immersive than just sitting in front of a computer screen looking at an appointment scheduling form. Instead, a visit to a doctor’s cyberoffice will be more like an actual visit to a bricks-and-mortar office today . . . without the long lines and the buckets of leeches, of course. Technology in the year 2100 CE allows your grandchild to put on a pair of cool-looking glasses and enter a virtual office in cyberspace. There is no need to enter an ID number or password because the virtual reality glasses have already verified your grandchild’s identity with an iris scan. After entering the virtual office, the participant encounters an automated receptionist. Note two things here: 1) By 2100, people will be “participants” in plans designed to promote better health, not “patients” in search of old 20<sup>th</sup> century “cures;” and 2) The “virtual receptionist” will be so “real” that people will forget they are actually interfacing with a sophisticated piece of software and not a “flesh and blood” person. Your grandchild walks up to the receptionist, and without even having to sign in, is greeted by “someone” who already knows the purpose of the visit and is waiting to help.

Now the real fun begins. Instead of filling out a half dozen forms, a short list of questions, specifically generated for your grandchild, are asked. In fact, the virtual reality glasses have already processed their vital signs and factored them into the questions being asked. On top of that, another virtual healthcare professional has analyzed the interactions of the prescription drugs your grandchild is taking and has reviewed his or her diet, depending of course upon how much information your grandchild authorized the refrigerator and pantry to let their doctor see.

I could go on, but you get the picture. There is one little part of this scene you might not have thought about, however. On leaving the virtual doctor's office, your grandchild notices a small plaque near the door. And on that plaque there is an inscription recognizing the people who took the first small steps that eventually led to the fantastic healthcare system they now enjoyed. Prominently displayed under that inscription is your name. And do you know what your grandchild will think at that moment? They will think, "You know, as much as I appreciate all of the stock my grandparents gave me, what I appreciate most is this wonderful system of healthcare they helped bring into existence."

Some of you may laugh, but there is no reason that story can't come true. Almost all of the technology I described has already been developed, at least in its embryonic stages. Take the virtual doctor's office for example. Last December, I attended a conference called Avatars99, which took place entirely in cyberspace. It was conceived of by a friend of mine, Bruce Damer, and built by him and his merry band of wizards. This was a real trade show featuring keynote speeches, breakout sessions, sponsor's booths, and even a few "bots," or cyber-robots, which answered questions and gave directions to those of us who roamed through the virtual conference center. Admittedly, this technology is still too primitive for most people to appreciate. At least it is primitive when compared to some computer games that already take place online in extremely realistic and sophisticated virtual worlds. It isn't virtual reality technology that is in short supply. What is in short supply is the funding required to apply this technology in more business applications. As for your grandchildren's virtual office visit, some of those automated interactions between them and the healthcare administration team are already being tested in a clinical setting.<sup>2</sup>

Although visiting the past and traveling to the future are fun, the real question is where do we stand today. Most of you will agree that we have come a long way since the days of medieval medicine. In fact, as recently as ten years ago few of us could have predicted the changes in our business lives the Internet has brought about. Whether we like it or not, the dramatic advances we are seeing in medicine today require equally dramatic changes in the way healthcare services will be delivered and administrated in the near future. Not only must we find ways to finance and deliver healthcare when our average life expectancy is 120 years or more; we must also find increasingly efficient ways to administer healthcare if our companies are to survive.

One of the unanticipated, and positive, changes in healthcare that the Internet has precipitated is a better-informed patient. For example, four years ago, during my annual physical examination, it was discovered that I had cancer. The very first thing I did after leaving my doctor's office was to go to the Internet and begin researching facts about my disease. Within weeks, I was in direct contact with others in my age group who had already faced the same situation. By the day of my follow-up appointment I had read hundreds of pages of information and heard first-hand the pros and cons of various treatment options. On my first visit to the specialist to whom I was referred, I brought along a list of 17 questions to ask. He scheduled an hour for this appointment, yet we were done in about 20 minutes. My doctor was obviously pleased at how efficient the

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<sup>2</sup> See "Provident Health System," *E-Healthcare Connections Preview Sample Journal*," found at <http://ehealthconnections.com/index2.html>.

visit had been, and I was secure in my understanding of my options. While I can't say enough good things about my doctors and my insurance provider, for they truly saved my life, I also feel that access to information on the Internet was equally important in my eventual cure.

Sometimes I think the current "goldrush mentality" about the Internet keeps us from seeing what is really taking place. During the last holiday season, we heard a lot of talk about eCommerce, eBusiness, eRetail, and eEverything. The other day I searched the Web for the word "eHealth" and came up with 1,250 hits. Then I did a search on "e-Health" with a hyphen and I got another 7,340 hits. It seems that we are awash in "e's," yet, many companies are still missing the single most important key to success in cyberspace. That key is *community*, or eCommunity if you insist. What too many Web site planners sometimes fail to understand is that just because your Web site is providing new services to your customers it doesn't mean that they will take advantage of everything you are planning to offer. Online enrollment is an example of a service that is often proposed, yet is low on the list of services people are looking for. We have actually become accustomed to standing in line and filling out paper forms. People have been waiting in line since before Ethelred the Unready became the King of England. Ultimately, if we want people to change the way they interface with our healthcare systems, we must first give them a good reason to change their habits. While our technical staffs may think that online enrollment would be an extremely useful service to offer, our customers may have other priorities. (I will come back to this point later.) That is why I encourage you to build interactive communities in which you can ask your own customers what they would like to see in the way of additional online services. In the long run, the cost of building an online community might even be less than some of the expensive marketing surveys you conduct, and the information you glean from your customers should be even more to the point than what you can obtain from an outside marketing group.

Building an active community around the information you provide on your Web site is neither easy nor inexpensive, and it may be difficult to sell this idea to executives who have little personal experience with the Internet. Everyone here is familiar with the pressures of limited budgets and short term return on investment requirements that are dictated "from above," but that doesn't mean we can't help our companies take a few small steps in the direction of the future we visited a few minutes ago. If you provide people with a well designed source of information, at no apparent cost to them, *and if you let them interact with one another*, I am convinced you will quickly begin to build a loyal community following at your site. And please note, I am suggesting you build these new communities around *information*, not around your product or service offering. We are now firmly entrenched in the Information Age, and if you have been involved with the Internet for any time at all, you understand the mantra "information wants to be free." Let me give you an example of one way in which "free" information can bring in new customers.

A few months ago, I thought I was coming down with the flu, but I wasn't sure if it really was the flu or just a bad cold. So I went to the Net and began a search. Before long I found myself at the Kaiser Permanente site which not only had a lot of relevant information about the flu and colds, they even provided a little button that made it easy to

email this information to my children who were also coming down with something. Admittedly, most of us now take such sites for granted, but think for a moment about what is going on here. A very large and successful organization is providing important public health information, for free, to anyone in the world who needs it. I don't have to be a member of the Kaiser plan to obtain this information. It is out there in cyberspace, freely offered to everyone with access to the Internet. In just a moment I will tell you about what Kaiser is doing to build a community around the information they provide, but first I want to emphasize how important it can be to your business to provide free information.

What if, instead of *me* searching for healthcare information, a high school student working on a homework assignment about the flu came across the Kaiser site? In most cases, if the information was to the point, the student would take what they needed and move on, probably not even realizing whom it was that provided that information. But every once in a while, synchronicity steps in and the student might tell his or her parent about the great source of information they just found. What if one of those parents was in the process of selecting their health plan for the coming year, or what if that parent is the person making such a decision for their entire company? Helping someone's child with a homework assignment surely can't hurt your company's image in that parent's mind. You will seldom know whom you are helping, but the *karma of free information* will repay you many times over for your efforts.

It is important, however, to take careful note of the fact that not only is it very expensive to make a false start in building an online community, a false start can also be fatal. Time and attention span are in short supply, so it is difficult to lure someone back to a Web site they once found too slow or of little value. We are now at the beginning of one of the most important ages of human history yet to unfold. While many are calling this the Information Age, it really isn't information that is today's most valuable commodity. The equivalent of gold and diamonds in the 21<sup>st</sup> century is attention span. That is what we are in competition for today, the attention of people for whom time is in very short supply. If you just put up a Web site with a lot of links to unstructured information, I doubt if you will see many return visitors. There simply is too much competition for "eyeballs," as the ad industry calls site visitors. Before you approve your company's new Web site, invest some of your own time and visit all of your competitors' sites. Then look at some of the Web sites that provide information about alternative medicine, such as Doctor Andrew Weil's.<sup>3</sup> I can assure you that your plan participants are visiting sites like his. Pay close attention to the features and layouts of sites that catch your attention long enough to keep you there for ten minutes or longer. I know you don't want to think about this as you approve the spending of millions of dollars to move your business online, but if you can keep someone at your Web site for just ten minutes, you have done an excellent job. The next time you use the Internet at home, take note of your own online behavior. It is probably not all that different from the online behavior of the people you want to draw to your company's site.

Since most of you here today work in the *administration* of healthcare, you may have lost sight of the forest because of all the trees that keep getting in your way. Do you

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<sup>3</sup> Dr. Weil's Web site may be found at <http://www.pathfinder.com/drweil/>.

know that questions about health are among the most often asked of Internet search engines? It has been reported that the fastest growing segment of new Internet users is people over 55 years old, and that 75% of these new users are coming to the Net primarily to find answers to health-related questions.<sup>4</sup> As most of you know from personal experience, after the first month or so on the Net people tend to return repeatedly to the sites that they found most useful. In essence, we become members of the communities these sites foster. Since health related issues are at the top of most people's list of information requirements, you are all in particularly good positions to capture a large and loyal following for your Web sites. Even at my own Internet consulting company, Matrix Masters, Inc., we are building a health awareness section on our Web site. We are working with doctors, personal trainers, nutritional experts, and others to develop enough compelling information to bring new Internet users into our online community. While healthcare information is not the primary focus of our site, it may be what brings us the most new visitors.

Let's take a moment and think about a typical first time Internet experience. If a new user logs on to the Internet and searches for a phrase such as "healthcare administration," almost instantly they will be presented with 100,000 or more "hits." After a little practice, they may refine their search to the word "eHealth" and find they have now narrowed their choices to a mere 1,250 links. But what if that same person comes to your Web site and discovers that it is a dynamic portal to the most pressing health issues of the day? If that person finds your Web site useful, the odds are high that they will begin their next healthcare search from *your* Web site rather than beginning with a search engine. I don't mean to disparage search engines and indexed sites like Yahoo. Many of them provide excellent services. But remember, time and attention span are in short supply. So any service you can provide to save people time has an excellent chance of success.

This may be a good place to mention a couple of the ways I begin searches when I don't already know of a site specializing in the information I need. One of them is an extremely fast search engine named Google.<sup>5</sup> The thing I like most about Google is the way it ranks the listing of Web sites it finds. After all the sites containing your search words are found, they are ranked using a method called PageRank. This method rates Web sites by the number of other sites that link to it. And this is done in a recursive manner, which means that the linking sites are first judged for relevance by the number of links to them. In essence, a Google search ranks its results according to how useful others have found the pages with your keywords on them.

As good as search engines like Google are, however, some areas of research lend themselves more to a hierarchical review. For example, Google returned over a half a million hits when searching on the words "health care industry." For a topic such as this I turn to a more structured search, like the one provided by About.com.<sup>6</sup> In just three clicks (and that is the *maximum* number of clicks anyone should be required to make to find what they are looking for) the About.com site presents you with an entire section on the Health Care Industry. Unlike search engines that rely primarily on sophisticated software to find relevant information, sites like About.com use teams of experts to find

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<sup>4</sup> See <http://www.nua.ie/surveys> for a wide variety of interesting Internet statistics.

<sup>5</sup> <http://www.google.com>

<sup>6</sup> <http://www.about.com>

links to special interest topics. For example, About.com's Health Care Industry section is moderated by Keith Rasmussen, who is very interested in what you have to say about the usefulness of the information his team has organized for you to use. In fact, I recently received an email from him telling me that a major revamping of the About.com Health Care Industry section is underway. And he asked me to tell you that if you have any suggestions on how this site can better serve your information needs, now is the time to let him know.<sup>7</sup>

Another good example of a focused source of healthcare information is E-Healthcare Connections.<sup>8</sup> This organization has added a dimension I find particularly helpful. They publish a monthly magazine in paper format as well as providing an online version. Like many of my contemporaries who spend a great deal of time in cyberspace, I find a printed copy of information a pleasant break from spending so much time in front of a computer monitor.

E-Healthcare Connections also sponsors symposia where the “movers and shakers” of the healthcare industry present reports on their latest work. For example, at a recent conference they presented well-known speakers such as Dr. C. Everett Koop, and Dr. George D. Lundberg. One of the presentations at that conference that caught my eye was given by Graham Pallett, a principal in the Deloitte Consulting Healthcare Practice, and Thaddeus Grimes-Gruczka, EVP of Cyber Dialogue, who spoke about their research into “the new breed of e-healthcare consumer.” Although I did not attend the symposium, I downloaded a copy of their presentation from the E-Healthcare Connections Web site and used some of their information in this talk. (By the way, I highly recommend that this audience obtain a copy of that presentation. It contains some excellent statistical information, some of which I will refer to later.<sup>9</sup>) The fact that I can obtain information of this quality for free continues to astound me. Does E-Healthcare Connections have an ulterior motive in providing this information at no cost to people like you and me? Of course. Just like all of us, they must find a way to underwrite the delivery of the information they work so hard to assemble. Although everything I have just mentioned about their site is available to the public-at-large, E-Healthcare Connections also has a more in-depth section that is restricted to paid subscribers. I see nothing wrong with this. In general, sites that charge a fee for *unlimited* access also provide a great deal of free information to the public-at-large. By doing so they demonstrate the quality of their material so one can determine ahead of time whether the price of a subscription is worthwhile. Besides being a wonderful public service, giving away valuable information is also good advertising.

My point here is that to become one of the first stops on someone’s Internet experience you must do more than simply put up electronic copies of your company’s brochures. You must invest the money required to constantly update, and occasionally reinvent, your site. But you shouldn’t do this in a vacuum, engage your site’s visitors in your efforts to keep their loyalty. Who knows, you might capture the attention of someone like me who will give your company free advertisements, simply because I

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<sup>7</sup> Keith Rasmussen’s email address is [healthcare.guide@about.com](mailto:healthcare.guide@about.com).

<sup>8</sup> <http://www.ehealthconnections.com/>

<sup>9</sup> Deloitte Consulting and Deloitte & Touche, “*The emergence of the E-HEALTH CONSUMER*,” found at <http://www.ehealthconnections.com/index5.htm>.

found your site useful. In fact, if any of you add a section to your Web site that tracks the far edges of medical science dealing with human/machine symbiosis, I would be interested in hearing about it. While conducting my research for this presentation I came across a lot of interesting research that I would like to keep up with but don't have the time to constantly search out. For example, are you aware of these projects:

- At the University of Reading, just west of London, a researcher named Kevin Warwick had a specialized computer chip surgically implanted into his arm. After the implant, as Kevin moved through his laboratory building, lights automatically came on and doors sensed his presence unlocking themselves and giving him a friendly greeting as he moved through the building. Next, he plans to physically connect an implanted chip to a nerve bundle and send electrical signals directly to his brain.<sup>10</sup>
- Emory University has already tested a computer interface that is controlled only by a person's thoughts. While this research is currently focused on providing a mouse-like computer interface for quadriplegics, it may have other applications as well.<sup>11</sup>
- Some researchers are investigating "digital drugs" which can be used to battle depression and other psychosomatic illnesses. Perhaps we will one day see these "drugs" distributed over the Internet.<sup>12</sup>

I could go on, but you get my point. My guess is that not many of you have begun to think about how you are going to handle the administration of digital drugs or neurological implants, but some of you will be faced with exactly this type of problem before you retire. Every hour of every day there are people conducting Internet searches to learn about the latest advances in medicine. Reliable sites that provide this information are difficult to find and evaluate. So, if you decide to include a section about futuristic advances in medicine on your Web site, be sure to let me know so I can join your community.

I hope I have made my point about providing more information on your Web site than what is already available in your company's sales literature. Content is your most important feature, but how you deliver that content is equally important. As you migrate your points of customer contact into cyberspace, there are three words I recommend you place at the top of every requirements list. They are "security," "privacy," and "speed." Since the issues of privacy and security are going to be covered in more detail this afternoon, I will focus on the issue of speed. Along with the speed at which you are moving your operations into cyberspace comes the issue of how "speedy" your Web site is for users with dial-up connections. Let me tell you a trick most Web site developers use when seeking final approval for all of the bells and whistles they want you to fund. It is actually quite a simple tactic, but if you let them get away with it you might be sorry later when you discover that no one stays at your Web site for more than a minute or so. What often happens when a prototype site is shown to the final decision-makers, is for the entire site to be loaded on a stand-alone computer that is used for the demonstration.

<sup>10</sup> Warwick, Kevin, "Cyborg 1.0," *Wired*, pp. 145 – 151, February 2000.

<sup>11</sup> Kurzweil, Ray, *The Age of Spiritual Machines*, pp. 127, 128, New York: Viking 1999.

<sup>12</sup> Warwick, *op. cit.*

The one ingredient a demonstration like this lacks is a feeling for the actual amount of the time it takes for certain site elements to be transferred over the Internet and displayed in a user's browser. Granted, an off-line demonstration is really snappy and often exciting, but when someone tries to access the same page over their 56K modem connection they may find that your home page is so heavily loaded with graphics and Java applets that the time for a full download is simply not worth the wait. You should conduct frequent reviews of your site's traffic and look for patterns that may indicate your site is simply too slow. If you find that there are parts of your site no one visits, either revise them or get rid of them. Remember, attention span is now our most important commodity, and if a home page takes over ten seconds to load when using a 56K modem you are going to lose a lot of traffic. In fact, many people think *five* seconds is the longest download time you can get away with.

Another common problem I see is in the addresses, or URLs, companies are using for their home page. I won't name any names, but there are many well-known healthcare companies that have this problem. One example of a "bad URL" I recently found outside of the healthcare industry is that of the Quality Paperback Book Club. Their address is "qpb.com." That seems easy enough, but for a guy like me who sometimes has dyslectic fingers it can cause confusion. The other day I was going to change my account information at the book club and entered "www.qbp.com." As the site began to come up in my browser, the first thing that appeared was a menu allowing me to click into the Account Information section. Before I noticed the site's title, I clicked on the Account Information link. Once on that screen, however, I couldn't figure out what they had done to their site. Nothing was familiar. That is when I discovered I was at the Quality Bicycle Products site. I had transposed the "p" and the "b" in their URL. That may not sound like a very big deal, but I will be willing to bet that address confusion has lost both companies some business.

One of the other things that amazes me is to see large companies secure a good "dotcom" address without protecting the "dotnet" and "dotorg" domains as well. We are only talking about \$35 a year to own a domain name. Why would anyone spend millions of dollars on their MYCOMPANY.COM site and let someone else snap up the "org" and "net" domains with the same name? That is truly a case of being "penny wise and pound foolish." In fact, prudent Web site managers reserve virtually every combination of their company's URL they can. For example, if your primary URL is [www.oceanwalkers.com](http://www.oceanwalkers.com), you should also reserve all other possible combinations of that name. In that case, you might wind up with

<a href="http://oceanwalkers.com">oceanwalkers.com</a>	<a href="http://oceanwalkers.net">oceanwalkers.net</a>	<a href="http://oceanwalkers.org">oceanwalkers.org</a>
<a href="http://oceanwalker.com">oceanwalker.com</a>	<a href="http://oceanwalker.net">oceanwalker.net</a>	<a href="http://oceanwalker.org">oceanwalker.org</a>
<a href="http://ocean-walkers.com">ocean-walkers.com</a>	<a href="http://ocean-walkers.net">ocean-walkers.net</a>	<a href="http://ocean-walkers.org">ocean-walkers.org</a>
<a href="http://ocean-walker.com">ocean-walker.com</a>	<a href="http://ocean-walker.net">ocean-walker.net</a>	<a href="http://ocean-walker.org">ocean-walker.org</a>

In a case like that all of the dozen or more URLs can still point to just one Web site. By reserving any URL that could possibly be confused with yours, you have preempted competitors, disgruntled employees, and the like from causing name confusion for you in cyberspace. Like the case of abbreviated URLs, incomplete domain name reservation is

often due to a manager knowing so little about the Internet that they let their technical wizards make marketing decisions for them. While it might be easier for your technical support people to use cryptic URLs, they aren't the people for whom you are building your Web site.

Another interesting challenge you will be facing as you move more and more customer service functions out of the back office and into cyberspace is how to let your customers know that these new services exist. Earlier, I told you about finding the Kaiser Permanente site while searching for information about the flu. What I didn't tell you is that it was only *after* I found the site through a search engine, that I discovered they also have an extensive member's section. The ironic part is that I am a member of the Kaiser plan, and while I am sure they have included information about their site in many mailings, the information never reached me because my wife handles all the "snail mail." The only mail I ever see is email. It seems to me that notices about online services should be promulgated online as well as by postal mail. Every registration form your organization uses should provide space to include an email address. And those email addresses should be used to build mailing lists to promote your new online services. I know that people like me, who live and work primarily online, are not in the majority today, but we will be before long. In my opinion, companies who learn how to serve their online customers best are the ones who will be around 100 years from now. And if you want that block of stock you give to your grandchildren to be worth anything, that fact should be important to you.

I suspect some of you are thinking, "What does all this talk about Web sites have to do with me? I could care less about our Web site, my job is the back office. It is the high volume Information Technology (IT) systems I want to hear about." Well, guess what? In order to survive during the next 10 years, *everyone* in the IT organization *must* be constantly thinking about your customers' *total experience*. Price and quality of service will always be factors, but in today's economy, we must never lose sight of the end-to-end customer experience. Whether your customers are participants in health plans or providers of services, their primary interface with your company will eventually be through the Web. In addition to price and performance, they are also going to require convenience. How easy is it to do business with your company? That should be the first question you ask in every requirements gathering session.

I would like to return to the Kaiser Permanente Web site example for a moment. As I mentioned earlier, my first visit to this site came through a search engine. On the first page of their site, however, I discovered that they have a member's section, which is protected by ID and PIN number. Since I often obsess about Internet security, I was pleased to see that PIN numbers were only distributed by postal mail. Personally, this gave me a good feeling for their concern about my personal privacy. So, I requested a PIN that arrived in the mail a couple of days later.

I won't take the time to go through the Kaiser site in detail, but I must admit that I was quite surprised at how advanced it is when compared to other sites I have visited. Not only can I quickly and easily find addresses, phone numbers, and the like, I can even schedule personal appointments without having to use the telephone. In addition to the extremely large body of medical information they provide, Kaiser also is building interactive online communities centered on various health issues, such as breast cancer,

food supplements, and so forth. The fact that these interactive forums are moderated by Kaiser professionals serves a dual purpose: 1) The quality of the information is more trustworthy; and 2) Postings by cranks and odd-balls are kept out of the serious discussions that are taking place. This approach, which is expensive because Kaiser most likely pays their staff to moderate these discussion groups, is an important factor in building a true, unfettered online community.

I realize that some of you are probably thinking that even though this is a great way to stay in touch with your plan participants and/or customers, there is just no way you can afford to build such a Web site. I know this is true because I have been in your position and had to fight those budget battles myself. One thing I hope you learn today, however, is that if you *don't* provide this type of experience for your customers, one of your competitors most likely will. In my view, the *first* thing you should be allocating IT budget dollars for is projects that significantly enhance your customer's total online experience.

Later today, we will hear about steps the federal government is taking in regards to healthcare and Information Technology. Also, there will be presentations on large volume clearinghouse transactions and the ever-present issues of privacy and security. As you listen to these presentations, I hope you will keep in mind that the underlying technology required to make significant advances in automating the healthcare industry is already available. Granted, the ultimate, perfect, inexpensive silver bullet is not yet here, but there is more than enough great technology already on the market.

For example, digital certificates and smart cards have been around for years. The technology is well proven, yet the healthcare industry in the United States has yet to embrace it on a wide scale. I have seen more of this type of technology used in Europe and Mexico than I have seen used in the U.S. All I can ask is, "What are you waiting for?" It isn't a question of "if" this technology will be used in the U.S. healthcare industry. The only question is "when" it will be widely deployed. My advice is to bite the financial bullet now before you find yourselves trying to catch up with some new "fleet of foot" competitor.

Let me give you just one idea of how you can capture some mindshare in your industry. In the Internet trade press, it seems to be generally agreed upon that the next big thing will be wireless technology. It wasn't until a friend of mine showed me his new Palm VII, however, that I really understood the power a wireless Internet is going to unleash. To log onto the Net, all he did was flip up the Palm's tiny antenna. There was no typing or pointing, it was just like flipping on a light switch. With a few taps of his stylus he downloaded the weather for the city to which he was traveling, checked the departure time and departure gate for his plane, and received an urgent email. Wouldn't it be nice if he could also receive a reminder from his doctor that he had an appointment the next day, or better yet, if he could use his wireless device to schedule an emergency appointment with his dentist if he broke a tooth on a business trip?

Those of you who are responsible for building Web sites to provide services like this are probably excited about such ideas. If you are responsible for back office processing, however, you are most likely thinking that a service like that would be a nightmare to integrate into your legacy systems. Which brings me back to my earlier point that back

office IT and Internet-based customer services *must* become ever more tightly integrated. Our customers don't care about our internal problems. They only care about how easy it is to do business with us.

I would now like to shift gears for a moment and explore a few ideas about expanding your markets. While I realize that the focus of this audience is primarily Information Technology and not marketing, I have always believed that in today's economy, every employee must take some responsibility for sales and marketing. That is one of the reasons I am so enamored with the Internet. It provides a way for our technology-oriented staff to help open new markets. Granted, most of you here today are employed by regulating authorities and other organizations with strict geographic boundaries, but that does not change the fact that corporate diversification and mergers are taking place at an ever-accelerating rate. Frankly, I doubt that 100 years from now any of our companies will be in exactly the same business they are in today. That is why I encourage you to think about your business from the perspective of global opportunities that may present themselves when you provide free information on your corporate Web site.

I have two examples to illustrate what can happen once information is made available to hungry minds. Both of these examples are from a country with which we have a very complex but permanent bond, Viet Nam. The first one took place several years ago when a friend of mine was in Saigon on a family vacation. While there, one of his children suffered a ruptured appendix. I won't go into the horrific details of hospital medicine in Viet Nam other than to mention the fact that, at the time, their most modern hospital had only one wheelchair. Upon returning to the United States, my friend went to the Internet and found an organization that collected used wheelchairs, repaired them, and then donated them to needy people. Today, because of the simple act of providing information about this service, hundreds of wheelchairs are now available in hospitals in Viet Nam.

Last summer I witnessed another example of how information can act as a catalyst to make life a little better on this planet. Through the exchange of email with his family in Viet Nam, my friend discovered that leprosy is still running rampant in the jungles of the Central Highlands. After doing some research on the Net, he learned that the total cost of the medicine required to cure a leper is only \$28. To make a long story short, my friend raised some money and purchased a large quantity of this medicine. Last June, my wife and I accompanied him and his family to one of these remote leper villages to deliver the medicine, which has now begun to provide a cure for these beautiful people.<sup>13</sup>

The point of these two stories is that it was information and information alone that began the chain of events that led to a positive change in the lives of some people who are starved for information. You may never know whose lives are significantly enhanced simply because of the information your company gives away on its Web site. But I am convinced that simply because of the reputations your companies have for integrity, they will be among the first places that third world professionals will visit on the Internet. If the lines of people we saw in Internet cafés in Saigon and Hanoi are any indication, the free flow of information on this planet cannot be stopped, as long as we remain vigilant.

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<sup>13</sup> Persons interested in assisting in this project may send tax-deductible donations to Kontum Aid, c/o The Vietnamese Mission, 2510 East Hanna Avenue, Tampa, FL 33610. Phone: 813-238-5060.

This brings me to my next point, the dance between freedom and responsibility in cyberspace. As many of you are aware, there is an intense struggle taking place in cyberspace between opponents of free speech and those who believe in the free exchange of information. The initial skirmishes have taken place primarily under the guise of anti-terrorism and the War of Drugs. For example, we have seen the National Security Agency (NSA) impose its will on providers of encryption technology, preventing them from exporting their best products. Of course, this ban has had no effect whatsoever on the worldwide availability of military grade encryption software, which is now being supplied by foreign companies. Under the guise of the War on Drugs, Senators Hatch and Feinstein have already pushed legislation through the Senate making it a felony to have a link on your Web site connecting to any site that contains information about substances our government has declared to be illegal. At first blush, this may seem like sensible legislation to some of you, but after giving it some thought you may come to the same conclusion I have. Should this bill become law it will strike a major blow to the First Amendment of our Constitution.

Here is what I mean. Let us say that in the interest of the public good, the Partnership for a Drug Free America posts some information on their Web site about the dangers of smoking crack cocaine. Depending on how that information is worded, anyone with a link to that Web site could be put in prison for three years just for providing a link to that site. Obviously, the U.S. government doesn't employ enough people to constantly check the entire Web for these links. And Hatch and Feinstein know this. Their real game is to force people into pre-censoring their own Web sites to ensure that all information about non-prescription drugs is removed from the Internet. The bottom line is that even the information we want our children to read about harmful drugs will no longer be available. I am not going to belabor this point, but if IT professionals don't take a stand on issues like this we are not serving our children and grandchildren very well.

The beauty of the Internet, however, is that everyone is empowered to influence things such as the amount of free speech we want to have in cyberspace. Although there is a lot of debate among government officials concerning the regulation of the Internet, it is the Internet community-at-large, through the implementation of protocols, which has the final say. For example, a few months ago the Internet Engineering Task Force (IETF) held a meeting in Washington, D.C. at which the U.S. government proposed modifying the Internet Protocol suite to provide a back door for law enforcement agencies to tap Internet telephone conversations. They failed to get this idea passed primarily due to the fact that such a back door will also weaken the security of our data networks. The decision wasn't based on politics. It was grounded on purely technical reasons. Now it is quite a powerful organization that can resist the pressure of the United States government. And how do you suppose one becomes a member of this organization, the IETF? Just show up at their next meeting. It is as simple as that. In a sense, the administrative arm of the Internet is the world's largest functioning anarchy. Yet it seems to work quite well.

Whether you realize it or not, there are people in this room today who will make decisions that in one way or another influence the amount of free speech our children enjoy on the Internet in years to come. The reason I single out this group is because there is no greater need for security and privacy than when it comes to our personal health records. I

firmly believe that the policies and procedures regarding privacy and free speech that are established by the healthcare industry will eventually become the baseline standards for the entire Internet community. You have a significant responsibility here, and I am sure you will help us find the proper balance between completely unrestricted speech and responsible speech on the Internet.

Some of you here today may think that all of this talk about the Internet doesn't apply to you. Perhaps you are only concerned with keeping large amounts of data flowing through extremely complex private networks. If you do find yourself in that category, I would like to remind you again that the Internet is simply a *network of networks*. If you use a computer that is attached to a corporate LAN, and if the LAN is *in any way* connected to the Internet, your computer is "on the Net." There is simply no way around the fact that all of our machines, down to the smallest household appliance, will soon be interconnected. Practically every mechanical and electrical device we use is being redesigned with the Internet in mind.

Another way of looking at the Internet is that it is already an integral part of your customers' lives. As you can see from the demographics, of the 50% of the U.S. population already on the Net, 90% have health insurance, 78% want to manage their benefits online, 37% would switch carriers just to get online benefit management, and over 10 million of them will be changing insurance carriers this year.<sup>14</sup> If you want to continue to expand your customer base, you simply cannot ignore these facts.

Many of you are in positions to act on this state of affairs, so I caution you to listen to your customers before committing resources to new projects. As you can see from the Cyber Dialogue survey, only 26% of the people want online enrollment options. Yet that is one of the first things I hear project teams discussing. Granted, online enrollment can save your companies a lot of administrative overhead, but there are other things these newly empowered customers are looking for.

While we have taken a peek into the future this morning, we must not forget to take a close look at where we actually are at this point in time. Many of you have spent significant amounts of money to build a corporate Web site. Yet, the majority of your customers don't even know you have a site, and only 8% of insured Internet users actually use their insurer's site. There isn't much sense in spending the money to build these sites if you don't also spend some money to promote them.

One of the purposes of this conference is for you to find ways to improve customer service and at the same time reduce administrative expenses. Please note that not only is this possible, at least one industry has already done so. If you really want to be a hero at your company, why don't you come up with a way to turn your customers into your back office personnel. The banking industry has done exactly this through their use of ATM machines. Think about it for a minute. Instead of having a bank teller make the proper entries in your account, you push the buttons and do so yourself. As a result, your records are more accurate, paperwork is reduced, and on top of that, the banks actually get you to pay them for the privilege of working as part time tellers! Every industry needs to find its own version of the ATM machine. I don't know what the healthcare

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<sup>14</sup> Source, Cyber Dialogue, Inc.

industry's equivalent of an ATM machine is, but maybe someone here today will figure it out.

There are a lot of predictions about the future of the Internet floating around, and most of them have proven to be on the conservative side. My personal belief is that we haven't even seen the "tip of the iceberg" yet. If Forrester Research is correct, over \$370 billion dollars per year worth of healthcare transactions will take place over the Internet in just four years. Already we are seeing a significant amount of consumer spending for prescription drugs purchased over the Net. Some healthcare providers have already begun to offer simple back office functions on the Internet along with elementary forms of patient counseling. I am convinced that the future leaders of the healthcare industry will be those companies who take steps today to completely integrate the World Wide Web into their back office and legacy systems. By doing so, these companies will also provide the completely integrated experience today's customers demand.

I began this presentation by asking you to compare healthcare administration today with that of 1,000 years ago. Obviously, we have made great advances since then. At the most basic level, however, we are still in a world of long lines and leaches. Whether future generations will enjoy a more efficient delivery of their healthcare services depends in part upon the people in this room. Whether we like it or not, we are alive at one of those truly pivotal moments in time. Although we humans are only one of many species of life to be found on this planet, we are the species that has come closest to totally destroying our own life support systems. Each day we add more toxins to our environment. Each day our airplanes spread deadly viruses to new areas. Our species has now begun to take control of the processes of evolution itself as we move ever more deeply into fields such as genetics and stem cell research.

During times like these, when everything is moving and advancing so rapidly, we have little room for error. Every decision we make becomes significantly more important than when change is slow. While some people see only danger as the chaos around us increases, I see it differently. I see our species poised to make a quantum jump to a much higher state of awareness. While it is true that a complete breakdown can result from chaos, it is equally true, as Ilya Prigogine proved with his Nobel Prize-winning work in chemistry, even the most imperceptible nudge can cause a chain reaction resulting in a leap to a significantly higher degree of order.

My favorite analogy from the mathematicians who study chaos theory is the one about the butterfly in the Amazon. You all have heard it before. The little butterfly flaps its wings causing an almost insignificant disturbance in the air around it. Yet, from this tiny action a hurricane is born. It doesn't happen very often, but when it does, things change. Wouldn't it be nice if there were a few such butterflies in this audience today?

As I was putting the finishing touches on this presentation I tried to put myself in your place to see if I even came close to answering the question, "Is e-Health the next frontier?" To be honest, I am not so sure anyone knows the answer to that question. On one hand, when we look at where the healthcare industry is currently positioned in cyberspace, we can see how far we have yet to go. Thus, one could say e-Health is just entering a new frontier. On the other hand, when we look at where the industry was twenty years ago, we can also say that the frontier days are over and we have begun the

urbanization of e-Health in cyberspace. Like many things in this life, it all depends upon one's point of view.

There is one thing of which I am certain, however, and that is what the people in this room represent. And by "represent" I am not referring to the companies for which you work. A little over a year ago I began writing a book about the Internet. In fact, this is the first public forum in which I have even mentioned it. Don't get nervous, I am not going to try to sell you a copy of my book. In fact, my book isn't even going to be for sale in the normal sense of the word. Instead, I am going to distribute it for free over the Internet. To the best of my knowledge, it will be the first "shareware book." Anyone with Internet access will be able to download a copy and either print it themselves or read it online. That way no one has to pay for it unless they get something of value from it. And even if no one ever pays for it in cash, those who read it will have given me something much more valuable, a few precious hours of their attention.

Since you have already been so kind as to give me this past hour of your time, I would like to repay it by saving you the time to read my book. Instead, I am going to read you the last paragraph, which essentially sums up the entire book. In my opinion, it also sums up this audience.

Once you make the decision to *actively* join the collective consciousness of our species, you will discover that in the end, *you* are the spirit of the Internet, for the spirit of the Internet is nothing less than the awakening global spirit of humanity. The spirit of the Internet is your spirit, it is my spirit, it is *human spirit* in all its forms.

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