Technology Matters
By Ofer Shimrat

Cloud Computing and Healthcare
Bad Weather or Sunny Forecast?
What Is Cloud Computing?
In current IT circles, the Internet is often referred to as The Cloud. Think of multiple computers in a giant mesh all interworking together. Now think of many such meshes and step back ... see The Cloud?

Although you may not physically see it, The Cloud is there for all sorts of signals: data, telephony, digital, etc. The term “Cloud Computing” denotes the use of cloud- or Internet-based computers for a variety of services. In its historically short life span, its usage is still evolving as we speak.

The expression “The Cloud” has its roots in telephony applications in the early 1990s. Telephone utilities were leveraging The Cloud for their switching and routing in order to deliver the proper connections for phone calls, faxes, live feeds, signals, etc.

The Internet, in its infancy right around that same time, leveraged those connections to allow users to “dial up” and reach their intended Internet forum or tech support area. We now fondly look back at those times and wonder how business was conducted at “dial-up” speeds.

By the turn of the millennium, the Internet was moving at much faster speeds — referred to as broadband — and all the computing equipment to make that happen was up “there” somewhere, and the term “in the cloud” became all the rage.

Then, around the middle of the decade, “Cloud Computing” was firmly in the lexicon as a way to define what the user was doing: accessing computing services in the cloud.

As definitions evolved and got refined, Cloud Computing now implies the user experience moving away from personal computers and into a “cloud” of computers. Users of The Cloud are not concerned with the inner workings of the remote application and only “see” and “use” the services being requested, without control of the technology infrastructure to make it happen.

Keep that in mind when we traverse healthcare.

Who Uses Cloud Computing?
Almost everyone in this day and age with an electronic communications device uses one form or another of Cloud Computing — it is everywhere.

Whether you are banking online with your computer, viewing GPS-aware restaurant reviews on your mobile device, or sending live digital media through your webcam, you are using services in The Cloud, i.e., not installed or contained within your local device.

A case can be made that anytime you used dial-up in the early days of the Inter-
You were leveraging The Cloud, but were you? Your computer was local, your software application was local, your data was local, and you were viewing it on your CRT monitor locally. Back then, all you were using the Internet for was to transmit and receive data that, once the transmission was complete, ended up locally.

In the early part of the decade, companies like Amazon began architecting their websites in such a way that you could utilize their services simply through the use of a browser like Netscape or Internet Explorer.

Soon after, other companies got into the fray, and, through the use of more robust technologies, “in the cloud” applications became more and more commonplace. By the middle of the decade, most major corporations with a large Web presence had working and mature renditions of their services completely “in the cloud.”

Fast forward to now when companies like Google and Microsoft offer “in the cloud” services that require hardly any additional software on your local computer, beyond the operating system of the computer or device and a browser. Some services are offered for free by merely signing up, while others are offered as a recurring, monthly, per-seat subscription; schemes include Software as a Service (SaaS) and Application Service Providers (ASP).

It is a trend and a pattern that is quickly gathering steam.

**What Is Cloud Computing As It Applies to Healthcare?**

The trend appears to be irreversible. Many software applications, services, and data once in the realm of a local computer or local server safely secure in your building are now in the domain of the public Internet. Private health information once confined to these local networks is migrating, wholesale, onto the Internet.

Patients voluntarily grant access to their health records every time they sign a waiver to the health insurer that then decides on the payment disposition to the doctor, pharmacy, or hospital. For the most part, the collection and organization of this data is completely legal.

It then follows that companies want to automate and accelerate access to these records in order to offer “in the cloud” products and services to patients, doctors, and institutions.

The fact that Google and Microsoft are heavily invested “in the cloud” extends to their new offerings for medical record services, such as Microsoft’s HealthVault and Google Health. While still in beta testing, these software giants have partnered with large healthcare providers for their programs: Microsoft with Kaiser Permanente and Google with The Cleveland Clinic.

Microsoft and Google are two prominent examples of many other company offerings that are following the accelerating trend of placing previously local and private health records “in the cloud.” This coming explosion of information will be stored in massive data centers around the world and will provide access to healthcare records for patients, insurers, doctors, pharmacies, and institutions.

Interesting timing and fascinating convergence of events if you consider the new Obama administration initiatives like “Transforming Healthcare Through IT” and “Enabling Healthcare Reform Using Information Technology” — recommendations by the Healthcare Information and Management Systems Society (HIMSS) to the Obama administration and the 111th Congress.

**How Will Cloud Computing Affect Your Practice?**

In the coming months and years, several factors are converging into a “perfect storm” of opportunity and challenges.

For most solo, small-, and medium-size practices, Cloud Computing represents a juncture of significance. Do you invest up front and build your local computing infrastructure and keep your data local or do you amortize your investment over recurring monthly charges and keep everything “in the cloud,” including your data?

Either choice presents additional challenges: What about backups, disaster recovery and 99.999 percent uptime to the Internet? What about HIPAA compliance of these services and applications offered both as local and “in the cloud”? What about hybrid applications that leverage both local infrastructure and The Cloud?

Carefully analyzing the options and acting prudently could mean the difference between bad weather and sunny forecasts when it comes to implementation time. By utilizing the SWOT analysis approach — strengths, weaknesses, opportunities, and threats — each practice could analyze...
the adoption of a unique computing infrastructure commensurate with their needs.

The convergence of the technologies associated with Cloud Computing and the pronouncements laid out by the newly passed American Recovery and Reinvestment Act of 2009 (ARRA) will propel practices of all sizes to carefully consider their approach to their selection of the right electronic medical record application.

According to the Certification Commission for Healthcare Information Technology (CCHIT), more than 300 vendors currently offer some variance of electronic medical records — some “in the cloud,” some locally, and some in both. They include:

- Electronic Health Records (EHRs)
- Electronic Medical Records (EMRs)
- Personal Health Records (PHRs)
- payer-based Health Records (PBHRs)
- Electronic Prescribing (E-prescribing)
- Financial/Billing/Administrative System
- Computerized Practitioner Order Entry (CPOE) Systems

The Bottom Line

As part of your SWOT analysis, determine first which path your practice will take: local, “in the cloud,” or a hybrid of both. Then and only then procure your IT infrastructure to meet the software, hardware, and network requisites for that application, in that order.

Correctly implementing and utilizing information technology will offer your practice enormous benefits — local, cloud computing, or a hybrid of the two. Your practice will have better access to healthcare services and information that would subsequently result in improved outcomes, fewer errors, and increased cost savings — a sunny forecast to be sure.

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