KPMG

Healthcare's silver lining

The industry's stance on the Cloud is transitioning from fear to optimism

While the fate of the Affordable Care Act (ACA) will impact reimbursement models and the population of insured people, there are many other aspects of healthcare transformation that must go forward no matter what happens in Washington. Specifically, many disruptive technologies are shifting from *nice to have* to imperative in order to remain competitive.

Chief among these is cloud technology. Healthcare comprises billions of transactions every day -- handoffs from one provider to another, transitioning from treatment to payment and insurance submission, reporting, and documenting. As such, the industry is ripe for the secure and efficient transaction-processing capabilities of the Cloud.

What has held healthcare organizations back from the Cloud in the past? The answers range from reluctance to make the investment, particularly without a reduction in headcount, to continuing concerns about protecting patient data from cyber-criminals.

However, in today's hyper-competitive environment, the shelf life of these objections is rapidly dwindling. For example:
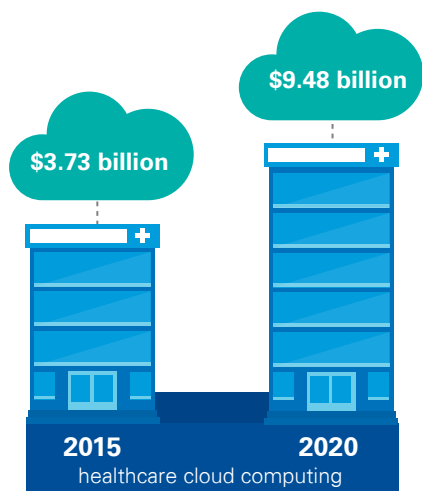
— **If an organization is using old legacy electronic health records (EHRs)**, or enterprise resource planning (ERP) software, a move to the Cloud is inevitable within the next two to five years as the applications will no longer be supported at that time.

— **If an organization is serious about moving toward value-based payment**, the Cloud is critical to achieving interoperability between EHRs at both related and unrelated providers serving the same patient, as well as to integrating data from wearables and healthcare apps.

— **If a provider organization is either an acquirer or an acquiree**, a cloud platform is necessary to realize the post-acquisition process and cost efficiencies that come with integration and scaling of the parties' information technology (IT) systems.

— **And finally, if an organization is concerned about cyber security**, it is important to note that moving to the Cloud is an opportunity to improve your security profile, as most cloud vendors have more robust cyber-security capabilities than hospitals could build themselves.
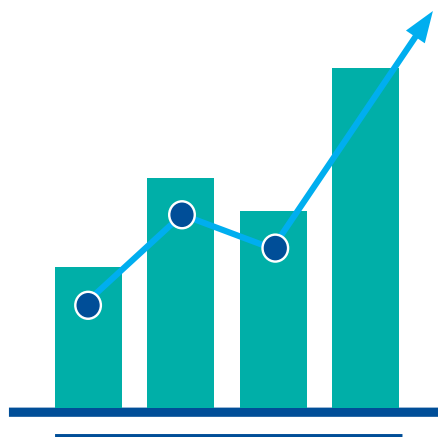
In light of these considerations, healthcare organizations are realizing that, if they avoid the Cloud, they will not only miss out on opportunities to save money, but also face rising IT costs.
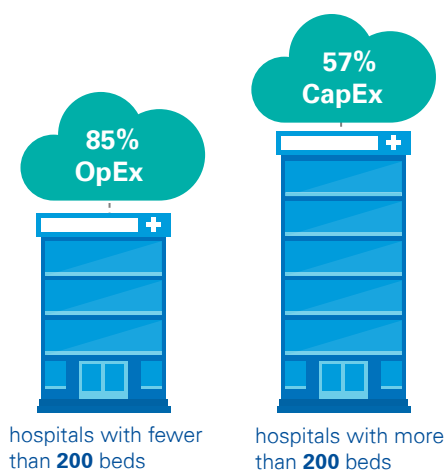
The cloud takes center stage

$9.48 billion

$3.73 billion

2015 **2020**
healthcare cloud computing

Despite earlier reticence, the global market for healthcare cloud computing is poised to hit $10 billion by 2021, according to a Frost and Sullivan report.[1] Similarly, MarketsandMarkets forecasts that the cloud market in healthcare will reach $9.48 billion by 2020 (up from $3.73 billion in 2015).[2]

Leading healthcare organizations are putting pressure on cloud vendors, as they aspire to have 85 percent of their applications in the cloud within the next three years. Sixty percent of respondents to an Economist survey said that the Cloud would be a major factor in healthcare by 2020,[4] citing centralized patient records and preventive care/wellness initiatives as the most important applications.

**85%
OpEx**

**57%
CapEx**

hospitals with fewer
than **200** beds

hospitals with more
than **200** beds

According to Blackbook's 2018 Healthcare IT Trends survey, small hospitals may be ahead of larger hospitals in terms of cloud adoption.[3] Eighty-five percent of hospitals with fewer than 200 beds say they are halting many of their capital expenditures in favor of operating expense-based solutions like cloud in 2018. Fifty-seven percent of hospitals with more than 200 beds report that they are ready to make the shift from CapEx to OpEx.

[1] J. Spitzer (2017). Healthcare cloud computing on track to reach $10B by 2021, Becker's Health IT and CIO Review.
[2] S. Sridhar (2017). Four things every CIO needs to do to accelerate mHealth innovation, Becker's Health IT and CIO Review.
[3] T. Sullivan (2017). Solving cloud computing's CapEx vs. OpEx conundrum once and for all, Healthcare IT News.
[4] Anon. (2015). EIU Survey "Cloud Computing and Economic Development," The Economist.

The cloud in the care continuum

Although most healthcare organizations now have EHRs, getting value from patient data to improve outcomes requires technology that facilitates free-flowing information sharing. With cloud technology, a holistic view of a patient can be securely transmitted between providers in a hospital, across specialties and among outside healthcare institutions.

Combined with data from claims databases, outcomes studies, and other public and private data repositories, this connectivity helps providers identify the most appropriate evidence-based practices, minimize clinical variation, streamline diagnoses, eliminate duplicative tests and procedures, and increase patient safety. It is critical to note that failing to facilitate coordinated care across the continuum costs the industry close to $35 billion a year.[5]

"Failing to facilitate coordinated care across the continuum costs the industry close to $35 billion a year."

Further, aggregating and analyzing EHR data—together with data from other systems of record, wearables and social media profiles—will allow healthcare organizations to take a customer-centric approach to delivering the innovative, secure experiences patients demand.

And patients will be empowered by in-depth data on their individual conditions – a critical component of preventative care and wellness.[6] Such efforts to improve the quality of the patient experience also help minimize wasted spending. According to a study by the Healthcare Advisory Board, 42 percent of wasted spending in the industry is due to insufficient quality.[7]

Through a technical lens:

Cloud technologies don't require batch system processing within hospitals, so patient records are available to all stakeholders as soon as new information is placed in the system. The technology gives organizations the ability to run regional applications across the country, and even across the globe, for worldwide consistency. Even when healthcare organizations and payers operate in locations across different states, cloud makes synching up disparate regulations on one real-time interface an easier task.

[5] Healthcare Advisory Board (2015). Setting the standard for patient care.
[6] Anon. (2017). Ascending Cloud: The adoption of cloud computing in five industries, The Economist: Intelligence Unit.
[7] Healthcare Advisory Board (2015). Setting the standard for patient care.

The cloud in cost transformation

The healthcare industry is under intense pressure to streamline infrastructure costs. Resources are being drained by on-site storage for the massive amount of data organizations hold today. This burden can be alleviated by moving large swathes of data from in-house storage systems to the Cloud. Studies show that organizations realize an average 30 percent savings from the shift from capital expenditures like on-site servers to IT *as a service* (XaAs) like the Cloud.[8] Of the IT as a service options, healthcare organizations are twice as likely to invest in software as a service (SaaS) than platform as a service (PaaS) in the next year, according to the 2017 Harvey Nash/KPMG CIO Survey.[9]

Of course, cloud expenditures can be unpredictable, as they depend on variable end-user behavior. Therefore, it is critical that organizations engage physicians and nurses early in the transition to gain insight into bottlenecks in the system, e.g., time-consuming manual tasks like logging on to the network, variability between user groups, and screen-to-screen efficiency.

Funding the future:

Using the Cloud for cost transformation in the back office helps healthcare organizations keep up with the demands of a transforming industry:

1. An operating-expense model like cloud gives organizations the flexibility to upgrade to new IT offerings as they are introduced.

2. Dollars freed up from cloud can be used to pursue more customer-facing innovations like telehealth, precision medicine, patient portals, and 360-degree patient views.

3. As regulatory mandates that govern data storage remain in flux, cloud infrastructure and associated applications allow organizations to make rapid adjustments and reconfigurations to reduce the risks of compliance violation penalties.

"Organizations realize an average 30 percent savings from the shift from CapEx to IT as a service like the Cloud."

The cloud in the cyber-security mix

Healthcare organizations have long held some serious reservations about cloud usage, including fears that protected health information (PHI), financial data and Social Security numbers could be put at risk. In fact, 42 percent of healthcare respondents to the Harvey Nash/KPMG CIO Survey cited legal and regulatory compliance concerns as one of their main reservations about full cloud adoption.[10] In reality, however, using the Cloud is an ideal way to help protect a healthcare organization's most sensitive data.

First, cloud providers have a vested interest in maintaining the highest levels of cyber security, as their businesses hinge on securing their clients' data. Second, the cloud infrastructure takes a multilayered approach to isolating patient records and managing access control, which minimize the chances of a breach by a malicious actor or human error. Third, the Cloud delivers heightened reliability and continuity with its server hardening, encryption and disaster recovery capabilities.

Taking baby steps:

While many healthcare organizations are undertaking wholesale migration of their data systems to the Cloud, we recognize that others may want to take a more incremental approach. For organizations that want to take interim steps toward implementing cloud technologies, there are several options:

1. Using a hybrid of a cloud platform and on-premises technology can help healthcare organizations secure the most sensitive information within their firewalls, while moving new processes and business initiatives into the cloud environment.

2. Organizations can start with generic cloud or cloud platforms that are specific to certain back-office applications.

3. Those that are inclined to take a *watch-and-wait* approach may be ready to make bolder moves when advanced cloud applications like block chain become more mainstream. Combined with cognitive computing and artificial intelligence, block chain is poised to take secure data sharing and interoperability to the next level.

8 J. McGittigan & B. Gomolski (2017). Opex vs. Capex: CIOs should partner with CFOs, Gartner Research.
9 Harvey Nash/KPMG CIO Survey (2017).
10 Harvey Nash/KPMG CIO Survey (2017).

What to do first

As healthcare organizations embark on their journey to the Cloud, there are five broad considerations that should be top of mind:

1. Determine which of your assets could potentially be transitioned to a consumption-based, pay-as-you-go model in the Cloud.

2. Develop a list of cloud vendors that have a vision for the future.

3. Ascertain whether any EHR vendors with which you contract have block-chain capabilities, or at least a roadmap to how they'll get there in the near future.

4. Acknowledge the difference between configurable and customizable cloud software; only customize if your situation is highly unique.

5. Concurrently with any cloud migration, begin change management programs to help ensure that existing employees have or can develop appropriate skillsets.

Conclusion

Migrating to the Cloud is not about keeping up with the competition or implementing the latest technologies. Healthcare organizations considering a move to a cloud platform should start with a close look at their priorities. Improving patient care, maximizing efficiencies and elevating your cyber-security profile are only three of many critical areas that can be addressed through strategic adoption of cloud technologies.

How KPMG Can Help

KPMG is one of the largest providers of professional services to healthcare and life sciences organizations globally. We serve nearly half of the top 200 healthcare systems and academic medical centers in the United States.

Significantly, our healthcare cloud team has a great deal of market awareness to help organizations through vendor assessment, selection and contract negotiation. Our information technology specialists and data scientists are responsible for some of the most innovative cloud implementations in the industry. Our strategists help ensure that any technology decisions made are firmly rooted in a longer-term vision that allows clients to keep up with the pace of change. And our integrated cross-functional teams ensure that technology doesn't operate in a vacuum but reflects the perspectives of end users, operations, security and governance, procurement, and finance.

Our engagements with healthcare organizations comprise the following and more:

— Profiling and prioritization of IT cost opportunities, including application rationalization/consolidation and related total cost of ownership savings in software & maintenance, infrastructure, application support labor, and third-party services costs.

— Migrating traditional IT services to the Cloud, software as a service/managed services

— Devising consumption-based pricing models

— Selecting best-of-breed vendors

— Restructuring the future state IT governance model

— Functioning as a value-added project management office for IT transformation

— Streamlining back-office cloud deployment through KPMG Powered Enterprise (KPE) methodologies.

Author Bio

Vince Vickers is a speaker, blogger and information technology consulting executive. A recognized authority and thought leader in healthcare information technology, he is a Principal with KPMG. Vince has 25 years of project and program management experience, in a variety of industries, with ERP and clinical systems, mergers and acquisitions, business process reengineering, applications development, and financial analysis.

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