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HIMSS Healthcare IT News

Developing a Cloud-First EMR Strategy

Building an agile, resilient and scalable infrastructure.

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Chris: There are economic benefits, and if you can't hone in on what those economic benefits are for your organization, then it's probably not time.

Patty: Hi, I'm Patty Enrado with HIMSS, and I'm with Chris D'hondt, North America Health Technology Lead, Global EMR Cloud Offering Lead for Accenture, and John Barto, Chief Digital Transformation Officer for Microsoft Health & Life Sciences. Welcome, Chris and John.

Chris: Thanks, Patty.

John: Thank you, Patty.

Patty: Today, we're going to talk about EMRs in the cloud. Chris, how are healthcare organizations preparing for technology advancements and the next generation of care delivery?

Chris: Well, I think you see the impacts COVID has had in the healthcare space. COVID forced every organization to really think differently about virtual care. To think about systems resiliency and just the different enablement that they had to prepare both their clinicians as well as their patients. And organizations now understand the importance of technology and how the expectations of the end-users, again, the clinicians, the nurses, and the patients, are changing their demands.

And organizations really need to think about how to take advantage of modern technology to change the patient experience, to change how outcomes are delivered, to create a data-driven environment where there can be data-driven insights in how patient outcomes are delivered, how data-driven decisions affect corporations, how to think about staff balancing.

So, you know, I think traditionally providers were slow to take advantage of modern technology for many of the good reasons around the security issues, regulatory issues, and I think with the evolution of modern technologies, especially with cloud technology, that landscape is changing and there's a recognition that modern technology really can change how healthcare is delivered.

Patty: Chris, why should an organization look to develop a cloud-first strategy?

Chris: I don't think it's a cloud-first strategy, because I think today's organizations are always going to be a hybrid cloud environment. Much of the technology is not ready to move to the cloud, and I think we're going to see a big evolution for much of that legacy technology, but it's going to be slow to evolve.

As organizations think about why you move to the cloud. Taking all of their clinical applications, where possible, and moving to the cloud, they're going to really enable different experience, different outcomes. They're going to create resilience, they're going to strengthen their security footprint, they're going to take advantage of machine learning and artificial intelligence, and ultimately, they're going to change their cost profile. They need to adopt a cloud mindset, but they have to realize there's an interim period where there's going to be the need for hybrid cloud.

They also have to think about their data center investments and their infrastructure investments. And do they really want to still maintain that responsibility or look to leverage third parties to take advantage of cost savings?

Patty: Right. It sounds like there's a lot of questions that they need to answer first. John, is there a major driver for moving a healthcare organization's EMR to the cloud?

John: Yes. The thing that I hear from most health organizations is they're trying to go to the cloud for multiple reasons with their EMR. One of the primary reasons is agility. Chris mentioned early on about the pandemic's changed a lot of things for folks, and one of the experiences we've seen during the pandemic is as they tried to spin up resources to add call center folks, for instance, to their EMR, basically what they were doing is reducing the performance for the care providers at the bedside.

They need that kind of agility to be able to maneuver resources around as things happen in the health system. And that's one of the main reasons we hear. The other reasons are really focused onsupply chains. I couldn't even get new technology if I even wanted to do it on a capital basis and put it in my data center.

The thing that's always been true is finding technical talent that will work in the healthcare industry is not easy to do. If you move your EMR into the cloud, you get a lot of advantages in a lot of those things. And those are kind of some of the main drivers we're hearing. There's also a security uplift that you get when you go to the cloud, but we'll talk about that a little bit later, I'm sure.

Patty: So, Chris, are all EMRs ready to move to the cloud?

Chris: I think every EMR is developing a cloud strategy and how their platforms run in the cloud. I think if you talk to the folks at Epic, 70-plus percent of their customers are unable to move their Epic installation to the cloud.

I think one of the challenges with Epic is depending on the size and scale of their database, the number of environments, the number of users—the performance of the hyperscalers is not there yet. And I know every hyperscaler is working closely with Epic to get their performance thresholds to suit all hospital systems regardless of size.

I think if you look at other EMRs: Meditech, Allscripts, Cerner, they're all developing a plan to get their platforms to the cloud. Some clients aren't ready for it so they're still in that hybrid cloud model where part of their clients are leveraging their old technology or legacy technology, and some are taking advantage of cloud technology. I believe we'll see in the next three to five years, that there will be very few, if any, instances of legacy EMRs running on premise or running in a data center and they will all be taking advantage of cloud technologies.

Patty: Great. So, John, talk about how cloud technology can benefit healthcare organizations, especially around disaster recovery and moving towards interoperability.

John: Sure. A lot of the requests we get nowadays is to first of all put disaster recovery in the cloud. And we're getting a real special request for most health systems at the board level at this point around, how do I put just a read-only copy in the cloud so that if somebody were to lock down my environment with ransomware, at least I would have some place for my care providers to operate and see history of the patient and those types of things.

We're seeing that as an early request, disaster recovery is usually the first place they put over into the cloud, but we're also seeing some organizations split their capabilities between cloud and on-prem. A great example is we have an organization in the Pacific Northwest that's actually serving up their desktop capability for their EMR from both the cloud and on-premise. And what they're noticing is they're getting better performance from the cloud space than they are in the on-premise space.

We're seeing a lot of that kind of capability. And then when it comes to the interoperability side of it there's a lot of technologies that are happening in the cloud around new standards like FHIR and those types of things where cloud providers are providing those as basic services. We have our own FHIR Server at Microsoft that we present. A lot of people are starting to use that, particularly as those types of services are starting to be regulated by the government. So, if someone makes a request that we have to offer those types of interoperability through FHIR standards, if you would.

It's really helping us in that space. I'll end that message with a little message that one of the care providers told me. They said that their CFO asked them, "Why would I move to the cloud?" The answer was, "Well, you probably want to ride around in a horse and buggy, but people don't make those anymore for a reason, because everything's gone to the automobile." And that's what's going to happen. Much like Chris said, we believe in the technology space that most of these things are going to be offered in the cloud. There are so many more services we can augment a health system with when they get into the cloud structure.

Patty: Right. So, Chris, let's talk about the cost barrier and discuss some of the costs associated with moving to the cloud. How can an organization overcome any cost concerns and potentially create variable cost structures to toggle performance needs up and down as needed based on usage?

Chris: I'd say first thing I think everybody has to realize that it's not cheaper to run in the cloud unless you run differently and have a new cloud operating model. On a like-for-like basis, if you think about cloud as pure infrastructure, you're not going to get cost savings. But how you consume that infrastructure, the scalability, the flexibility, and the elasticity allow you to do it.

Also, there is an upfront cost. It depends on the number of environments you have for your EMR. It depends on how big your database is. It depends on how many workloads you're running and your servers, not only for your EMR, for your clinical applications. And it costs money to move that to the public cloud. I think you see that systems integrators and hyperscalers are investing in that move but still hospital systems have to understand that there is an initial capital outlay.

I think also, not every hospital system is ready today because every hospital system has to invest significantly in their infrastructure on an ongoing basis, and they depreciate that infrastructure. And so I think it's at the right time of when that refresh cycle's starting to be contemplated again is really when you start looking at it because you eliminate the need for capital infrastructure outlays because you replace it with the consumption of the hyperscaler, the cloud consumption, as well as your cloud-managed services.

There's that right period of time where you can offset that and you invest moving your infrastructure, you move your application to the cloud, and then you lower your operational costs. Your cloud consumption, again, taking advantage of elasticity and using the environments when you need them, right? Today, your infrastructure's there all the time. You pay for it, you're depreciating it.

Tomorrow in the cloud, you need to spin up a training environment for five days, you spin it up, you run it for five days and you turn it off and you pay for those five days. You don't pay for it forever. And so, between the variability of cloud consumption costs and the ability to partner with hyperscalers, or systems integrators, to really drive down your operational costs, leverage automation, really you think about infrastructure as code and you can spin up environments and spin them down. It requires less manual intervention.

And so, I think you have to realize that:

- One, there is going to be an upfront cost.
- Two, you have to look at it at the right time when you do this because of the capital planning that you have to forecast for your organization.
- Three, you have to offset your legacy operational expenses with a new set of operational expenses where it's elastic cloud consumption and lower cloud-managed services through the heavy use of automation.

Patty: Great. John, how can moving to Azure help with cost management?

John: It's interesting you should ask that. We have lots of conversations with organizations really around the agility side of the conversation. They get into a position where they can scale up or scale down based on their need. If you think about even the example I gave around the pandemic, where they needed to put on more call center people, but they couldn't reflect their performance in their care clinics. That's an ability to be agile, be able to do that without huge amount of capital cost and huge amounts of time delay.

With supply chains where they are today, that process would take them six to 12 months to get the right components, the right people in there for management purposes. And if you look at the overall cost, there are so many services that are inside of Azure that are managed by the Azure cloud themselves and by Microsoft, that you don't have to have humans interact with.

We call those platform-as-a-service offerings where we'll do the management across the board for them and that helps them a lot with human capital issues inside the health system and really applying their personnel to the most important thing for the health system.

It also alleviates the concern of not having performance incapability at the time you need it. But the number one thing that I've been hearing from CFOs is it puts them in a position to be agile in the way they engage their consumers, whether that be the consumers which are their patients or their health members, or the consumers which are their doctors and nurses.

It creates an ability to use the kinds of technologies we see in every other industry to craft new experiences, to make sure they're keeping that set of patients interested in their health system so that they don't migrate somewhere else or leak somewhere else, as well as keeping their human resources, their doctors, their nurses engaged so that they're not losing that human capital. So cost management is much beyond just the actual cloud basis itself.

Patty: How can moving to the cloud help to advance AI and machine learning opportunities?

John: Well, if you look at cloud services in general, one of the things that Microsoft has been very focused on is we build a lot of cloud capabilities. Those cloud capabilities are agnostic to an industry. What we've been doing in healthcare is we've been building interfaces to allow the healthcare industry to use those advancements. And many of those advancements are around learning from what a patient does, what a person does from a behavioral perspective, and helping guide them. A lot of that underlying capabilities around AI and machine learning.

There's just some sheer size when you get into AI and machine learning of data sets and compute platforms that you're going to not be able to replicate on-premise. Or you could at great cost, but then those machines become antiquated, you have to manage it and it's not really cost-effective. So you have access to much more human capital when you get over into the cloud around AI and machine learning, but also unlimited sets of resources to be able to do that.

And the other thing we're seeing strong interest in is being able to collaborate around building new models. And we've seen secure mechanisms for people to

bring their data together from different health systems, build models, and then effectively leverage those models in each of those systems, without the security concerns of their data being moved from one place to the other.

And those types of environments where we can get the top end of the human marketplace around AI machine learning, all the processing capability, and a collaboration capability is really advancing what we can do in the AI and machine learning space in healthcare.

Patty: Chris and John, discuss how healthcare organizations are partnering with you on the journey to the cloud. And let's start with Chris.

Chris: Today we serve so many clients in the provider space, whether we're helping them with data-driven insightsor with the patient experience. We're talking to them about talent strategies. And so there's a variety of things that we're helping with. And I think what we just talked about is leveraging the cloud to enable all of those examples.

Our clients are talking to us about how cloud technologies can change their ability to deliver experiences to the patient. Patients today want experiences that they receive as consumers. And while patient care or healthcare isn't necessarily a consumer service, they want to be treated that way. Doctors and clinicians are looking for the ability to drive different outcomes. To have more information at their fingertips so they can make more informed decisions.

We talked about administrator's needing to optimize their cost. We think about nurse scheduling and the challenges we have today and all of that can be powered by cloud technology. What our clients are talking to us about is, as we're thinking about these transformative topics, how do we bring our cloud technology knowledge and how do we bring the knowledge of platforms like the EMRs that we've installed and supported for many, many years? And then, how do we leverage our relationships with our partners like Microsoft to make investments, to deliver assets?

What I see is, we are not selling cloud technology to the clients, we're selling change, we're selling transformational outcomes, and we're using cloud technology and we're using the capabilities that John just outlined, and we're bringing those to reality for our clients. Some at scale, some in proofs of concept, some in a deliberate way. So again, we're thinking more about how to change the experience, the access of care, and the clarity of care, and using modern technologies like cloud technology to deliver that promise.

Patty: John?

John: I'd like to really emphasize one of the things Chris mentioned, and that is that a lot of the conversations we have with our potential clients and our clients starts off with a cultural shift conversation. And Microsoft is uniquely positioned for that. Because if you think about it, we've culturally shifted our entire organization away from a software provider that used to sell technologies that came in boxes, all the way to a suite of cloud services that people depend on us for security and scalability and defense against cyber-attacks and those types of things.

That whole cultural shift is one of the primary things we start off with when we talk about the journey to the cloud. But when you think about it, there are multiple

different ways that you could look at taking an EMR to the cloud. You could go to the EMR provider themselves and say, "I want to use a hosting capability that you have."

But most of our customers are focused on actually taking all the assets they have, the EMR and beyond, and moving those assets into a cloud space mostly because what they want to do is get to the point where they can get their data organized in such away so it becomes an asset for them in the war against consumer organizations coming after their patients or their doctors and nurses and they can start to leverage that data footprint very strongly. That's where things like the AI and learning conversation we had earlier are very interesting.

One of the things that we get discussmore than anything else is, "How do I organize my data estate so I can optimize the use of my assets and actually provide the best services possible to both my care providers and my patients. And therefore, be able to grow my organization because I'll be seen as the premium brand in the space?"

That is a cultural shift. And it's a very significant cultural shift in this industry. That's where we see the partnering happening. Most of Microsoft, we're putting on lots of investments to make sure people can successfully go to the cloud, get comfortable in the cloud, to move their journey along. Like we've put on black belts, if you would, around just EMR migrations to the cloud. We've brought in some of the world's-leading expertise in that space so that we can help them do that.

We're using all those resources to make sure that they're successful as they move through that journey. And we're also partnering with the EMR organizations as that journey is happening to help them optimize the way cloud would support their capabilities.

Patty: Great. I just wanted to say, you know, there are a couple of things that stuck out for me. One of the things is talking about the cost to the cloud, there's a myth of it's less expensive. But I think both, Chris and John, you talked about what the cloud brings, when's the right time to start that journey. But also, what are the benefits that you're getting from it that offset sort of the initial, you know, outlay.

And then the other thing that both of you touched on was the cultural shift, but also, the cloud technologies as a technology. And as Chris was talking about, we're changing and we're using cloud technology to do that change and we're collaborating for more opportunities and to do what hospitals and healthcare providers want to do is to serve their patients. So, anything else you want to add, Chris and John?

Chris: You go first, John.

John: I will close with probably one of the most interesting conversations I've had in the last couple of years, and it was at a board level at a very significant health system in the United States. And we were brought into the board meeting, and we were sat around, and we were talking about the migration that this organization was making to the cloud.

And the CFO stopped the conversation and he said, "Yeah. I know we're spending a lot of money on the cloud. I'm not a technology expert. I don't really understand why I'm being asked to finance all this money for cloud versus the way we've typically done it through capital expense and building out our own data centers."

And we didn't focus on the conversation around cost. We focused on the conversation around the opportunity in front of that health system to secure their customers for their patients and customers for life through the experiences they can generate in the cloud. Or risk, more importantly risk, the loss of those as consumer-oriented companies move toward a healthcare business.

You see players like a Walmart, or an Amazon, or others move into the healthcare space. If they can create an experience, and they usually churn their software and technologies every six to 10 days, if they can do that, and healthcare's stuck in a scenario where they're being able to turn the experiences every 8 to 10 years, you know, that competition's not going to last long.

And the conversation really turned to: "You've got a massive set of capital investments, a large labor force, the thing that you can't afford to do is have your members and patients leave you for better experiences. The only way to get to those experiences is with the modern technologies and capabilities in the cloud. And it's the speed of innovation is why you're investing in the cloud so heavily."

That really swayed the dialogue in that instance to, "It's a growth strategy, not as much a cost-containment strategy." And that was very important in the relationship we own with that organization. Chris, I'll turn it back to you, I just wanted to give an example.

Chris: I was going to echo something very similar, again, there are economic benefits and if you can't hone in on what those economic benefits are for your organization, then it's probably not time.

But you don't move to the cloud to save money. You want to think about the capabilities that John just outlined that the cloud can deliver.

It changes the outcomes that the clinicians provide to the patients. It changes the experience that the patients receive in a consumer-like model. It creates a new security profile; there are bad actors every day trying to get inside these healthcare providers, trying to sabotage their data and sabotage their systems. And so you have to have a protective environment. And not every environment's foolproof but you can leverage the cloud security to better enable your ability to recover. You need to think about the innovation that you can drive in your organization.

If you're an educational organization, the research that the students and the professors want to do, your clinical research. You want to create the availability in scale as you think about what you want to do is taking on different kind of care patterns. You want to take on acquisitions of new providers as you grow your business.

And so again, you have to have an economic profile that works for your organization, but you have to have that forward-looking mentality to really embrace what cloud can do, the innovation it can drive into care delivery and the outcomes and the experiences it can change for the end-users. And when you embrace that, that's the power of what cloud can do in the healthcare space.

Patty: Great. Thank you so much for your insights, John and Chris.

Together: Thank you for the opportunity.