The IT Modernization Podcast Series

A Three-Part Podcast Series hosted by Guidehouse Addressing Top-of-Mind Issues in IT Modernization

Podcast Episode - IT Modernization: Leveraging Emerging Technologies

INTRO: Welcome to "Modernizing IT, the podcast where IT experts and visionaries from federal government agencies and the private sector share behind the scenes insights into the innovative world of IT modernization.

ANIL: Hi, I'm Anil Krishnananda, a director in the Advanced Solutions group at Guidehouse. Today's topic is emerging technologies. And to discuss this is our guest, Tanya Arthur, who in her role as a CIO has been at the forefront of numerous technology transformation and IT modernization programs at various healthcare organizations.

In our most recent role as CIO and vice president of Blue Cross and Blue Shield of Kansas City, she engineered the turnaround of an expansive technology transformation project enabling the company's push into population health management and technology advances such as robotic process automation and AI.

Before joining Blue Cross and Blue Shield, Tanya was CIO at Summa Health in Northeast Ohio, where she implemented an IT governance framework and helped the organization leverage emerging technologies such as virtual health to enhance patients access to care. She now works as a consultant. Tanya, welcome to the show.

TANYA: Thank you Anil. Happy to be here.

ANIL: Tanya, the last two years were a watershed moment for digital healthcare. CIOs like yourself, were forced to quickly pivot to virtual or digital health solutions and scaled these solutions literally overnight. A challenging scenario for any CIO, but even more so when you consider the impact those choices can have on people's lives. I'm keen to learn as I'm sure our listeners are given the level of change and disruption the pandemic brought to the healthcare, how did it impact your focus on and strategy for emerging technologies?

TANYA: Yes, it was a tremendous time. At that time I was at Summa Health. And certainly we had been working to drive digital strategies, had developed a virtual health program that we were embarking upon, but when the pandemic hit, a lot of things changed.

While our strategy was to implement virtual health over a period of years, literally we had to implement technology overnight. That required a lot of creativity and a lot of willingness to break breakdown barriers in every part of the organization.

As a healthcare industry, the pandemic has changed a lot with respect to digital health and really in terms of being able to accelerate that whether it be virtual care platforms, remote monitoring, self-service tools, and a real keen understanding that the need for data and analytics is foundational for the success in being able to serve the needs of the patient population as well as the broader communities that we serve.

ANIL: So what were some of the challenges you faced or concerns that rose with respect to implementing emerging technologies during this period?

TANYA: Yeah, for sure. So first and foremost was the availability of the right capabilities. We had a number of different challenges. Cybersecurity and data security was paramount. And unfortunately during the pandemic as is today, the bad actors, they became even more active. We started seeing increases in phishing, increase in social engineering, increase in ransomware. And not only that, but our vendor population was being heavily taxed with these types of challenges. So that was one of the areas and a critical area at that.

Another area was what technologies to use? What were the solutions that we were going to need to us more immediately versus more long-term? And then balancing all of that with the competing priorities. So we're still having to address patient care as we always have, even though we had reduced elective surgeries and things like that.

Some of the technologies that we stood up were in the cloud and so we were cutting some corners to accelerate the timeframe to be able to implement these various technologies, for example like IoT connected devices. We didn't want patients coming and sitting in the waiting room and potentially being exposed if they didn't have COVID. In some cases, we didn't have places to really put people that were of lower acuity and so we started to implement IoT connected devices with various companies. So all of those things combined happening at the same time was quite a bit of a challenge during that period.

ANIL: As you implemented emerging technologies at scale and speed, what were some of the key lessons you learned?

TANYA: Yeah, there was a lot. One of the key lessons was, which it's gonna sound a bit old school, where there's a will, there's a way. We certainly had a burning platform for change. And being able to balance that radical change with the need to ensure that the technology was delivering the desired outcomes. And the second thing I would say is, you need to demonstrate strong change leadership at an accelerated pace. So really looking back on that, were we moving too fast in some areas or too slow in other areas, was one of the things that was important. And still making sure that you got the necessary buy-in, bringing folks together, helping people understand the why of the change, understanding what's gonna be short-term versus long-term.

Another component of implementing different technologies at speed and scale is interoperability. One of the solutions that we ended up implementing was not integrated. We knew it was not integrated but we knew we needed to stand it up to take care of the patient population but understanding that integration and interoperability was critical to the seamless flow of information, we were gonna have to come back and bring that together. And as you know, Anil, that integration and interoperability is absolutely critical in healthcare.

Lastly, I would say, making sure that you have the right people in place as the technologies are changing. I read somewhere that to be considered an expert in a technology these days, it's less than two years. That's how fast the technologies are changing. So building out those strategies to leverage the skills that you have, build skills that you need, not only now but into the future.

ANIL: So mentioning of people and skills is a good segue into the second topic of our show that's leveraging emerging technologies and realizing value. Tanya, we have spoken about how as a CIO you adopted your IT strategy for emerging technologies. Let's pivot to talking more specifically about these emerging technologies. What technology are you most excited about now either from within healthcare or other industries that you see being relevant for healthcare and why is it peaking your interest?

TANYA: I would have to say data and predictive analytics. And what's peaking my interest there is the possibilities and the capabilities to obtain greater insights and to really truly personalize care. So today's healthcare industry, while we have a plethora of different technologies and access to data both inside and outside of our organization, it's providing the information we need to be able to care for patients, but it's not providing that next level up of, okay, what are the things that we can do as a health system that will truly keep people well?

In a personalized way, bringing in all of the different data elements not only within the health system which only represents about 20% to 30% of what it really takes to take care of patients, but also outside of the organization and also the payers and health systems. Blending all of that data together, analyzing that data using artificial intelligence and predictive analytics, I think has the potential to bring the health and wellness of a population to a whole new level of prevention. And so I'm very, very excited about that.

The second area that I'm really excited about is around continued capabilities of embedding IoT into how the consumer or the patient lives their life. So the capabilities around that are going to be tremendous.

And then lastly, there's some exciting things on the horizon with virtual reality and leveraging virtual reality along with analytics and IoT devices to really, again, personalize that care in ways that will help improve the health and wellness of the people that we serve.

ANIL: I see these as bright, shiny, new toys. So how did you kind of go about prioritizing these technologies or others and convincing your organization leaders to kind of select these three rather than 10 of these technologies?

TANYA: The technology is constantly changing, it's constantly evolving and there's always something new on the horizon. But how I really focus on that is really staying grounded in how that technology has the potential to truly impact the bottom line those strategic and operating objectives of the organization or the challenges and opportunities of the health system and the communities that it serves.

So for example, today we have a tremendous labor shortage, whether that be nurses or physicians coming out of school and going to health systems, technology, labor. So labor productivity and generating revenue is a critical area for health systems. So asking myself and asking my colleagues, what are the core focus areas, challenges and opportunities that we have in our organization? And second, looking at the technologies that can help drive improvements in those areas or help to get to that goal or vision.

Other things that I look at in selection of technology is ease of integration and interoperability with existing solutions. And I think that we've made progress, but I think we've got a long, long way to go. In working with my leadership teams, the core question that I ask when we're embarking upon any new technology solution is what problem are we trying to solve? What is that problem? And then secondly, how are we measuring what success looks like? And I don't mean like on time on budget, which is table stakes, I mean impact to clinical outcomes, impact to quality of care, impact to revenue, impact to satisfaction, all of those types of things. So that we know that every dollar that we're investing in information technology is producing a viable outcome. And then of course, underpinning all of that is cyber and the implications from that standpoint.

ANIL: Yeah, so you are basically more patient-focused and business-focused when you are deciding the technologies to use.

Can you share with us an example of an emerging technology you implemented as a CIO during your time at Summa Health or Blue Cross Blue Shield? In addition to that, what are some of the factors that made that implementation successful?

TANYA: For all organizations, whether it be payer, provider, you name the industry, productivity is part and parcel to operation. And at Blue Cross we were looking at ways to reduce manual task and to drive cost savings and improved productivity. And one of the ways in which we did that was through automation. So leveraging automation and combining that with artificial intelligence allowed us to not only reduce costs, reduce the labor demand, and be able to repurpose some of those resources to more critical critical type tasks, physician relations or whatever it happens to be.

Similar at Summa Health from a revenue cycle standpoint, they were doing fairly well. In fact, when we first brought the technology, the opportunity to leverage robotic process automation and artificial intelligence to improve revenue cycle and get more dollars to the bottom line and reduce errors and duplications, the initial conversation was, "Hey, we're fine. We don't really see that as a big problem." But as we talked about what the opportunity was we found that by implementing a combination of those two technologies, we were able to get a five time return on investment from utilizing that technology and repurposing some of that staff to do other things.

Leveraging from another area, from a population health management standpoint, being able to leverage the analytic capability to predict where we could reduce all-cause readmissions, and reduce avoidable readmissions in the ED, was another area that we were focused on.

We had implemented a number of different technologies. And one, we were going to implement some IoT devices where we could monitor patient's weight and temperature and a number of other areas looking at congestive heart failure helping to reduce readmissions in the ED. And what we found there was we were most effective by using old school technology, the telephone, and connecting with those patients and giving them a hotline to be able to connect with us directly. So to my earlier point that you've always gotta look at what problem you're trying to solve and what impact that it has. It isn't always it's gotta be a new emerging technology. Sometimes you may have the tools in your hands already.

ANIL: Interesting that you're saying with the mix of old and new technologies you can really make a difference.

What are some of the pitfalls or barriers to success CIOs need to be aware of when implementing emerging technologies?

TANYA: Oh yes, I've seen this in a number of different organizations, and I think one of the pitfalls is not having a solid core foundation to build on. Ultimately, for example, your network or maybe the hardware that you're building upon, they're investing in the new technology because it's shiny, it's new, it's trending, you see it in all the trade magazines and things like that, but ultimately don't end up successful at all or as successful as they could be because they're implementing it on shaky foundation.

The second is not leveraging the capabilities that the organization already has fully. I've seen in many organizations where they're buying technology using five or 10% of the capabilities and then searching after another technology. So far there has not been one organization that I've been a part that doesn't have shelf ware of capabilities that they could be leveraging.

So that's one of the things that I always do. Look at that portfolio of applications and technology. Make sure that that foundation is strong and if not, start building that so that as the organization grows, develops, brings on new capabilities, that the infrastructure can support that. And I would also say that really carving off a process or capability so that you can explore those newer technologies where it makes sense and there's clear value for the organization. And then lastly, making sure that you have solid governance within the organization. I've seen so many organizations get tripped up on decision making or analysis paralysis and either miss an opportunity or just never really get to goal because they're constantly spinning.

ANIL: Tanya, you touched on cybersecurity in this show in response to previous questions. How does the increasing cybersecurity threat landscape impact your approach to emerging technologies?

TANYA: So the more integrated we become, the more interoperable that we come, the more data that is exposed, the more that we're cloudifying that threat landscape becomes broader and broader. And they were doing that in two areas. One was identity. So I'll probably venture to say, in my career I hadn't seen that level of exploitation of identity whether that be through phishing or social engineering. It was at a peak during the pandemic and it continues. And then the second was really leveraging and attacking the supply chain, significant acceleration of ransomware and other types of attacks.

So for me my approach is to really have a solid security plan be able to protect, first and foremost be able to protect the perimeter. And then secondly, address those concerns that are inside the perimeter. Because most of those attacks are either coming from phishing. While people talk about internal threats and there certainly are internal threats within any organization, most of the exploitation is coming from outside. So making sure that you've got governance, risk, and compliance for security, that your perimeter is well protected, that you are hitting on all cylinders whether you're using high-trust or you're using missed framework. All of those things are critically important and has to be front and center in any technology selections that you're doing or changes that you're making within the organization.

ANIL: Yeah, so Tanya, I think with those discussions we are ready to move into the third topic of our show is the future of emerging technologies. What are some key trends or emerging technologies the CIO should be tracking or piloting in their businesses in the next three to five years?

TANYA: One is automation. And I think a big focus on AI and augmented software, whether that be within the EMR or outside of the EMR. Those technologies have significantly evolved over the last, I would say five to six years, and really are in a position now to really produce valuable benefits to organizations, whether that be in leveraging the data, whether that be in automating processes.

And then the second I would say is really data and analytics and establishing a data fabric within an organization. I think those technologies where you're bringing together not only the core technologies associated with data warehouses and things like that, but also being able to integrate that with integration in real-time analytics and real-time artificial intelligence is very, very powerful.

I think some of the ones that are not quite to that three-to-five-year mark but ones that we as leaders should keep an eye on are the virtual technologies. And immersive reality is really starting to accelerate in terms of some of the benefits. So for example, like with autism or with anxiety and depression, mental illness, occupational therapy, I think that's something that we as leadership should really focus on.

ANIL: Yeah, the key part of looking ahead is kind of anticipating user expectations. How do you anticipate user expectations whether the users could be employees, clinicians, or patients and how that will change in the future?

TANYA: Anticipating user expectations is really about understanding what's happening in your industry, understanding what's real and viable today versus what'll be five, I hate to say even 10 years down the line. And really having conversations with key leaders in your organization to not only hear what they're saying, but also bringing your business expertise to the table to help you anticipate what those needs are. So for example, how are we performing from a quality standpoint? What does our revenue look like? What does the throughput look like? What are the pain points within the organization? And what are our patients saying? So being ever present in the mix where the action is happening, where we're actually delivering care is how I anticipate what those user expectations are and then testing that out, right? So coming back with viable solutions and really working as a business partner with all of those different stakeholders.

ANIL: Yeah, with this kind of benefits measurement and working deep into the user expectations, we are at the end of this episode or the show.

Thanks for tuning into Modernizing IT and our discussion on emerging technologies. I would like to express special thanks to our guest, Tanya Arthur.

TANYA: Thank you.