



**CIO PERSPECTIVES ON  
DIGITAL HEALTH  
OCTOBER 19, 2017**

**Corinne Baxter (CB):** <<In>> the next forty-five minutes we are going to be exploring some of the themes that were raised during the Accenture and Oxford Analytica Research Study into Digital Health and CIO perspectives on that topic. Before we get started I'll introduce you to the panel. My name is Corinne Baxter, I am a Senior Manager in the Accenture Healthcare Practice.

Joining us digitally from Brazil, we have Lincoln Moura (LM) who is Principal Director in Accenture's Healthcare practice in Brazil. Lincoln's work has mainly related to Digital Health strategies since he joined Accenture, but prior to joining Accenture, Lincoln has worked in a variety of public and private healthcare roles, and he has worked in research, lecturer and CIO roles. So today he is going to be sharing some of his perspectives, both on the research and also leveraging those experiences as a leader in Healthcare Technology.

Next on the panel and in the room with me today we have Dan West (DW). Dan is the Managing Director who leads our Technology Consulting Healthcare practice in the UK. Dan has worked for 20 years in Accenture, so he is a 20-year veteran with Accenture of role. He has worked for nine years in Healthcare, both with the National Health Service in the UK and also with other global healthcare services. He works on technology projects so using technology in digital transformation to deliver change in patient outcomes and transformation of the healthcare industry.

Finally, our final panelist again in the room with me today is Mark Harrison (MH). Mark joins us from Oxford Analytica. Mark is a former BBC journalist and broadcaster. In this research, he has leveraged his experience of working in running national and international research studies as of looking at both infrastructure and social issues in both public, private and third sectors. So he brings a range of experiences to this discussion today.

As an audience you are going to have the opportunity to ask questions throughout the webinar, so please do use the instant message window to ask those questions as we go through the session. We'll try to cover all the questions that we come through. If we don't get to yours then apologies for that. We'll try to cover them before we wrap-up though. I'm going to pause briefly before we start with the actual Q&A. Hand over to Mark to talk a bit more about the actual research process and the study itself and how that was carried out. Over to you, Mark. Would you mind describing that for a couple of minutes?

**Mark Harrison:** Absolutely. Thank you, Corrine. So the research study as a whole, we started on this process about fifteen months ago. The aim was to get a sense of perspective. That was the key thing. So Chief Information Officers or equivalent roles in the Healthcare industry across the world, we want to get the perspective of those people. How are they looking at the Digital Health journey going forward? How are they approaching all of these various different challenges from the various skillsets and backgrounds that they have? So that was the overall thesis of the discussion and of the study. We covered seven countries, 30 interviewees across all of those countries and got a wide range of perspectives. The three hypotheses that we were looking to either prove or disprove with the study: the first one is that everywhere in the world, healthcare executives and healthcare CIOs are looking to meet consumers' growing demands and leverage digital health to lower operational costs. That's the first basic assumption, the basic hypothesis that we had.

The second one is that they need to get stakeholders, especially doctors. That's a key sticking point for a lot of people who work in the industry. How do you get doctors on board with this? How do you make sure the transitions are as seamless as possible when it comes to leveraging all of these different tools that you have available?

The third one is that CIOs are really taking on a new role. They are taking on a role that is perhaps more executive in nature than the people in their position have had in the past. Basically, it's a whole set of new skills that they are having to learn, that they are having to put forward and try and take advantage of going forward. That's what we're trying to get across with the study. It's been 15 months now and a very enjoyable experience.

**CB:** Great. Thanks, Mark. You talked about the study being across multiple countries. What commonalities did you find between the different countries, and what rose up as themes and consistent things across the different geographies?

**MH:** The first thing is that it was a really wide range of perspectives that we had. We had a lot of people with very different backgrounds. Some were clinical, some were not clinical, some had worked in healthcare all their life, some had not. A lot of people, particularly where the private sector was concerned, had come in from other industries. So industries that had overseen some sort of digital transformation before, banking or financial services, something like that. A really wide range of perspectives that we saw. Certainly, I know Lincoln is going to talk about the Brazil experience, and a lot of people in the private sector there from outside of healthcare with a different perspective on the challenges that the healthcare sector has in particular.

Another one of the notable differences, I think, was the level of resources available. In a lot of places, the UK most notably, the resources were very constrained either in terms of money or in terms of manpower. There was a big disparity between places and people that we spoke to across the country in terms of how much time they had, how much money they had, how much headspace they had, basically, to think about all these things writ large. It means that depending on what the perspective was at the particular CIO, it means that somewhere within the spectrum of big picture-thinking, executive CIO and a very nitty-gritty, operational CIO. Most of the people we spoke to fell somewhere in that spectrum, overall.

**CB:** Dan, Mark touched on a few things around a varied amounts of headspace and varied capacity across different CIO and experiences in terms of geographies. In the study, what did you find were the archetypes of CIOs and what do you think was most prevalent across that?

**DW:** Archetypes were a big part of the observations that Mark and I had taken from the conversations that we had in the UK and the NHS, more often than not. What I will say firstly before I talk about the archetypes is, and this builds up a little on what Mark had said--- almost universally and really encouraging to hear for me, was an agreement amongst the CIOs that digital transformation is going to play a big part in the future of delivery of healthcare services, particularly in public health ecosystems like the NHS. The combining factors that are driving up the cost of delivery services like the ageing population, like the increasing prevalence of lifestyle disorders, and the growing costs of advance therapies are not easily combatted with incremental efficiency gains in individual organizations. It actually needs a reimagining of how healthcare services are delivered and behavioral change for internal uses, patients and citizens in the way they deal with their own healthcare needs. Digital transformation is being seen in other industries. It is a big part of the consciousness of the CIO community. How are they going to address those challenges going forward, which for us as a technology business, was a really encouraging thing to hear.

Flipping back into archetypes and building again in what Mark had said, the ability of CIOs to deliver the digital vision that we've just aligned and combat some of those challenges that are affecting healthcare systems is a function it is constrained by a number of local factors like the mandate, background and skillsets, and the amount of time or headspace they've got to contemplate this vision and the journey towards digital transformation. We chose to polarize these archetypes on a spectrum.

On one end, there is the executive CIO, the digital visionary, that sits on the board and influences peers in relation to how technology can be a driver of value rather than just a driver of cost in the healthcare enterprise. They tend not to have their heads full of operational IT issues, like managing the legacy estates and keeping operating systems, applications and infrastructure on supportive versions. In comparison, at the other end of the spectrum, what we called operational CIOs, which in the UK tended to be called IT Directors. They would report to the board not directly, but through the Director of Finance or the Director of Estates, and they tended to be the folks whose heads were full of those operational day-to-day management and responsibilities, and therefore, had less of the opportunity and the mandate from the executive perspective to define and drive towards a vision of digital transformation. What we're not saying here is what is right and what is wrong. What we're saying here is there's a set of local factors that need to be considered when working out how healthcare organization can make the most of the opportunities that digital offers.

**CB:** Thanks, Dan. And to Lincoln, I'm going to pick up with you briefly one of the points that Dan just mentioned in terms of the demands of the healthcare system outside of technology, and specifically, as Dan mentioned, ageing population and lifestyle challenges. Obviously, it's well known that's a big challenge for the UK healthcare system. How is it in Brazil in terms of the key factors from a broader health context that are influencing the challenges that we're facing digitally?

**LM:** Thank you. That's a very good question. Brazil is a changing country as you can figure out because we come from a legacy of infectious disease. The profile of the country has changed completely. So at the same time that we need to deal with infectious diseases in some areas of the country, still in the big cities the major cause of mortality and disease are same as that are prevalent in the first world. So we need to deal with chronic disease. There is a lot of work moving on in terms of helping chronic disease patients so that they take care of their own disease. CIOs are aware of that. Still, the pressure for digital transformation comes much more from operational point of view. CIOs are trying to increase the efficiency of their services or systems rather than trying to feel the pressure from the outside world, from patients and from doctors in order to make the change. We interview CIOs from the larger hospitals, larger organizations in the country. They are concerned with this, but at the same time they feel the pressure from their top management to renew IT architecture, to get redevelopment assistance as soon as they can. Also in Brazil we have the operational CIO and the market executive CIO. One of the important difference here as compared to what Dan has said is that all the <<interviewed>> CIOs sit at the Board. So they have a voice of the board. However, half of them find themselves as a more executive profile than as operational. The coming notion that CIOs need to be able to do better with clinical information is something that is flourishing in the country at the moment. So if two years ago we didn't have any CMIOs or clinical CIOs. At the moment we have. In big hospitals, in the bigger organizations, even in the public sector, we do have them. This is a changing environment. It was very surprising to me in particular to understand that they don't feel pressure from the outside world. Seldom they do. But they understand that change is coming and they need to be able to cope with that. If you take that with the complexity of the environment itself, the fragmentation of healthcare in Brazil and the change of profile in the country, you see that we need to train people. We need to get people understanding the complexity of healthcare information and we need to keep improving capabilities so that we have better assistance to better people, better answers to all the needs for the country.

**CB:** Thanks, Lincoln. Really interesting point you mentioned about operational efficiency and the pressures from an operational and efficiency perspective on a large portion of the CIO community in Brazil. Mark, you talked about some of the differences between the correspondents. Is the operational efficiency pressure something that you saw prevalent in differences or was that the driving factor or the things that were driving that spread of focus between different geographies?

**MH:** I think, broadly, there is an acceptance that everyone is broadly working towards the same goal, and efficiency is a big part of that goal. The differences that we saw in terms of perspective, and Lincoln mentioned the Chief Clinical Information Officer and the role that bridged between the clinical and technological worlds. That's an interesting point because a lot of what Dan and I saw at the NHS, around the UK and speaking to people is that a lot of the CIOs that we spoke to had a clinical background. That makes a big difference because operational knowledge of what doctors do on a day-to-day basis comes naturally. That's a big gap. If you don't come from the healthcare industry, that's a big thing you have to learn. If you've been a clinician and you've got that perspective already, it's a big advantage. The CCIO role is also crucial because that's where these two things meet--- the executive and the operational, the clinical and the operational quite often meet. It's very important to have that bridge. That's the thing about the UK model. Even though relatively there were some disadvantages with UK in terms of resources compared to a lot of the other places that we spoke to people at. It's a big thing to have former clinicians in that position. It means that the workflow and the use of the technology comes much more naturally. Implementing things comes much more naturally.

**CB:** Possibly a difficult question, and apologies if it is. Which country respondent would you think is best placed to be taking forward the digital transformation journey?

**MH:** It is a difficult question. I'm not sure I can answer it with a single word. I think there are all sorts of pluses and minuses at play here. Not one country is doing well, one country is not doing well. It's a really broad range of different perspectives. You need the executive vision to see everything. You need resources, and you need organizational cohesion. Is that somewhere that's doing that better than others? I'm not sure. Certainly, for example, the Nordic countries, the people we spoke to there have a lot of resources. They don't necessarily have the executive vision and organizational cohesion whereas in the UK it was the case that slightly under-resourced in comparison but certainly in terms of overall knowledge of the healthcare ecosystem, perhaps there was an advantage there.

**CB:** Picking up on the CCIO role which both yourself and Lincoln mentioned is very important. Dan, from your perspective, do you see the CCIO role as something that has reached its maturity in the UK, or do you think that's going to continue to mature, and what do you think is affecting that? Because it's a relatively new concept in the UK.

**DW:** I think it's a relatively new concept. Out of all the geographies that we ran the survey, again really encouraging if you live in the UK, the maturity of the CCIO role and the recognition and the contribution that they can make in technology in general but also reimagining services and bringing in the digital, they were better than what we've seen elsewhere. The model being used in UK is being exported to other geographies and islands following soon, trying to appoint CCIOs in all other organizations. The role for a senior clinician with an interest in technology to partner with the CIO and be the voice of the internal user base and of the external patient and citizen in the social context was really positive. Our CIO community consistently said that that was a clear win for them in being able to address the human elements of the changed journey. Recognizing that technology itself doesn't deliver benefits. It's the changing of behaviors of human beings using that technology that will derive benefits for the healthcare ecosystem and the CIO role as well as a broader recognition of change enablement being a big part of the digital journey is what was really positive. CIOs were unanimously supportive of it.

**CB:** Good to hear.

**DW:** Yeah, it was really good.

**CB:** Lincoln, back to you for a second. What's interesting in the study, a large portion of the CIOs in Brazil seem to be coming from outside of the health sector, from other industries. Can you talk a bit about what you see as the reason for that and what you see as the impact of that as well?

**LM:** This is something that has always caught my attention and it was confirmed by the survey. CIOs in the public sector are basically taking from people, engineers but they have a strong background in healthcare. I used to be a CIO for a large hospital in Brazil. The funny thing is that guys from the private sector, they tend to hire CIOs from the market, from telecom companies, banks and the like because they feel the pressure of being outside the sector. Most of the CEOs themselves come from outside the healthcare sector so they tend to see that healthcare is very inefficient. Their first glimpse is to improve efficiency. In order to do that, they tend to hire CIOs that are very good at making IT work for the benefit of efficiency and efficacy. This is very interesting.

Whereas the guys from the public sector, to begin with the public sector is fierce in here. It takes into account what happens at the city level, state level and the federal level. These guys tend to be more fluent in the overall health system and so they are chosen to lead IT in those hospitals and environments. So this is something that is very important here in Brazil. But, as I mentioned before, this is changing. At the moment in our survey, one of the conclusions is that you may not have a civil person that embodies both knowledges. However, we need to have the profiles within the organization. We need to have the competence, the skills and the experience related to both IT and health. Otherwise it's not going to work. It has got to be able to assimilate a team taking care of IT within such complex environments because they have different networks and different understandings and different ways of thinking and exposing their ideas. Even though they may be complementary, they cannot get together if there isn't a facilitator. So I think that the new role for the CIO is really to be able to facilitate conversation and decision-making between teams of healthcare workers and IT folks. If you allow me, I would like to make a short comment, no CIO complained about the lack of resources. No one said, "I lack resources." What they said is that there is competition among resources. "I want to do more strategic things, and someone asks me to do more operational things." So although we have planning for doing things in a strategical way, but what happens is that all of a sudden I see myself buried in paperwork or technological issues that I wouldn't like to be in. So this is a very interesting point that came out here as well.

**CB:** That's really interesting. From the description that you've just given, obviously you touched upon some of the challenges there, but you've also reflected that what comes out in the research is actually that Brazil is well-resourced from the CIO perspective to actually achieve that kind of digital transformation in comparison with some of the other geographies, and hence, the kind of focus on that. Does it come as a surprise to you given the current economic challenges within Brazil? Because it seems quite surprising, really, that it would be so well-resourced despite some of the operational pressures that you mentioned, is actually taking a good step forward on the digital side?

**LM:** Again, that's a good question and I believe that the most important thing in here, that we lack the most is what Mark called organizational cohesion. This is something that has changed lately. Taking the provocation that was given by the survey, we had the meeting here at Century Sao Paulo where several CIOs, public sectors and people from the department of health discussed things, and the very impressive thing is that no one from the private sector understood that the department of health has the strategy being developed and deployed. It was a surprise from both sides to understand that interoperability, although it has been discussed since ages in Brazil, is still something that people are willing to have but are not prepared to deliver. This is part of the fact that people are very knowledgeable about the things they need to do. We have good backgrounds, we have good universities here, people move away to take their degrees if required. But the problem is that we lack the zeal that the collaboration, the cooperation is the most important thing in healthcare, because the

patient doesn't see the barriers. Only those who work at the hospital and other sectors see the barriers. Patients don't care. Patients - they go wherever it fits them best. So trying to answer your question, the crises that we face at the moment, the political and economic crises is a huge opportunity that's being taken seriously by the federal government to push to the digital health strategy. Let's see how it works. We never know because it depends on so many factors, as you all know. This is something that is moving on steadily at the moment, and hopefully will bring some results in some years.

**CB:** The interesting point that Lincoln, you made was notably the CIOs in Brazil didn't complain about lack of resource, and that being one of our biggest challenges. In UK we do hear that a lot. We hear a lot of challenges from the resourcing and funding perspective. Dan, obviously, we are going through a challenging period in the UK economically, some of the challenges similar to Brazil. To a certain extent it shows that the CIOs in the UK feel a little under-staffed. Why do you think it is so hard for them to attract talent in the UK to the CIO resources that are available in this digital transformation?

**DW:** I think those two slightly separate topics under-resourcing or under-staffing needs to be put in the context of what happened over the last few years in relation to IT in public sector healthcare ecosystems around the world. But this is certainly prevalent in the NHS. I'll generalize a little bit, but this came out in response across geographies in the survey that the technical debts in the systemic under-investment in technology, in healthcare, in particular in the acute sector across the spectrum has resulted in some resourcing challenges where as an example, CIOs have been mobilizing marching armies their resources to remediate the window server 2003 estates across the NHS as a result of the WannaCry Ransomware infection. When you've got to deal with those kinds of systemic technical debt issues, it tends to be quite distracting to think about your ability to deploy resources onto some of the more innovative initiatives and programs where digital transformation is then trying to enable new care models. So that's the first point about under-resourcing.

The second point about attracting talent. In the same way that we talked about a spectrum for CIOs earlier, healthcare IT teams are also on a little bit of a journey where traditional IT resources tend to lack some of the skills and would make people successful in the digital context. So things like translating and technology requirements and constraints into the language of clinical and operational staff-members in the hospital who aren't particularly interested in IT or aren't particularly digitally literate. The design thinking and service design skill sets are important in what has happened in other industries that embraced digital like retail industry and financial services sector. How agile approaches are relevant in healthcare and iterative development and minimal viable products in an environment where the dominance, historically and technologically speaking, is beating costs. So it's really hard to get a hold of those skillsets. They are very rare in the market and therefore are in some demand. Public sector organizations, public health ecosystems struggle economically to be able to attract that kind of talent because it's rare in the marketplace at the moment. CIOs said that the way they are going to combat that, in the NHS in particular, was growing their teams internally. A real focus on taking existing resources and equipping them with the skills, infusing in some new resources if possible and then building outwards rather than attracting inwards. One of the CIOs talked about in the apprenticeship program, who has been successful in taking younger folks in the organization and building the best skillsets as they go, and maintaining some level of dedication from that resource over time in the organization. Now having said all of that, I'm going to be slightly schizophrenic now, and talk about late-millennials and centennials where they are interested in doing work that matters. A technology leader in the NHS, not somebody that we came across during the CIO survey, but someone who is a significant leader in the way technology and digital will be embraced in the future of health service was at a careers fair recently. Was following on stage to do a presentation was an executive from a multi-national and a large media company. As they were passing on the steps of the stage they stopped to introduce themselves. The lady from the media company said to this gentleman

from the NHS: “It’s you that keeps stealing all of my youngest staff-members. Because they want to go work in the healthcare context. They’re interested in doing work that matters rather than making of a big multi-national more wealthy. That’s quite an interesting dimension that we’ll see play out over the coming years. Centennials make up a bigger portion of the digital workforce in the health service.

**CB:** That’s very interesting, Dan. You touched on two polar topics. You talked about the exciting stuff, the design-led thinking that excites that young audience, that future workforce, which is at one end of the spectrum. You briefly mentioned the technical challenges that we see in many healthcare economies and particularly the WannaCry incident has affected the NHS and globally affected many other industries as well. Just touching on that second piece, arguably you could say that many CIOs will be looking back at the last 12 months and will see that incident, that WannaCry storm, and the fact that the estates were not kept up-to-date enough to maintain the pace and protect against that as a significant mistake and on a national scale and also on a local scale where there were real impacts locally. What do you think are going to be the things over the next 12 months that may be the mistakes that further down the line? So if you are a CIO looking forward to the next twelve months, what do you think are the mistakes that they need to be avoiding that may be made by this? Have you got any thoughts on that?

**DW:** It’s perhaps not a mistake. It’s a missed opportunity which could be construed as a mistake in retrospect in 12 months’ time. I outlined the executive role of the CIOs and talked about their headspace and their outlook. My sense is that transformation in healthcare to create economically sustainable services for the future and better outcomes for patients within the healthcare context and social care outcomes for citizens outside of the healthcare context. CIOs need to recognize that inward views contemplating their own organization and their own organizational operational needs is missing a huge opportunity to collaborate and coordinate across organizations and across the CIO community in a healthcare ecosystem to share data better, to collaborate on infrastructural initiatives, to think about enabling new models of care and social services and through digital technologies and digital interaction. So I think if CIOs in 12 months’ time have done 12 months of inward focused thinking and operational management and technology, there’s been a huge missed opportunity. I would urge all CIOs to collaborate at community level.

**CB:** Where do you think that priorities currently lie from the study. I’m not just talking about the UK. Internationally, what did you see were the things that were important in the CIO community?

**DW:** On this question there are three parts to my answer. The first part thinks about people’s definition of digital health. If you ask 10 healthcare professionals what they thought digital meant, you would get ten different answers. But there would be some commonality, some themes. They would tend to be around things that Active Wearables, IoT and Telehealth. What CIOs said to us is that those things are undoubtedly important. But actually the maturity of the foundation in information systems in most organizations isn’t really there to sustainably enable that kind of digital transformation. One of the CIOs used a metaphor where building digital healthcare systems was like building a house. You don’t choose the curtains when you’re digging the footings, which means that there is a sequencing of priorities. While it’s interesting and useful to engage in longer term innovation and digital transformation, it’s important to focus on the foundations. One of the other things that came out of the survey was Callingham’s Hierarchy of Needs, which was based on Maslow’s Hierarchy of Needs. The psychology theory that for human beings to realize their full potential, their persona needs to be based on a series of foundations around physiological needs, security and safety needs and then emotional needs. In the same way Callingham’s hierarchy of needs thinks about digital healthcare transformation in the bottom layer. There are things like the need for shared WAN and data centers and cloud strategy at the regional level, ability enablement and internal and external user identity management.



The next level is of core clinical information systems. Getting those right and modernizing those and stopping taking notes on paper. The next thing is inter-operability and access to shared care records at the regional level, analytics and population health management and the pinnacle of the pyramid is innovation and digital enablement of care models. What CIOs all said was a priority for them was not waiting for the full picture in the executive mindset to crystallize around how you're going to get to the pinnacle, but making sure that the foundational layers get the right level of emphasis now, because waiting for crystallization of the full picture would delay investment in solving for some of the foundational problems that exist today.

Second part, CIOs know that benefits are seldom delivered by IT in and of itself. Benefits are about human beings changing their behaviors and doing things in different ways and executing processes in different ways. CIOs recognize the importance of the human element in digital transformation and in the wider healthcare transformation journey. We talked about already the CCIO role is one manifestation of the importance in the CIO's mind of bringing human beings into the technology change.

The final bit of my theory is around regionalization. I talked about this earlier in what the missed opportunity or the biggest criticism might be. CIOs are increasingly recognizing that there is an ecosystem play. There are multiple organizations of multiple different types in multiple different settings, and all of them need to collaborate together to achieve the kind of transformation that will combat some of the big sociological issues that are driving up the costs in healthcare that we talked about that earlier on.

**CB:** You touched upon a number of things that really rely on something broader than the traditional technology. It's talking about people, workforce, patients and patient attitudes. It's clear from what you've said and what comments that Lincoln, you made earlier on. That kind of stakeholder management piece is key to the success of the CIO individually and as a community. Can you talk for a minute from your perspective, what specific challenges are CIOs facing around that kind of stakeholder management piece and making sure that they are relevant and remain relevant to the board and that kind of executive level?

**LM:** First of all, I did consider that doing this for operational CIOs is much more difficult than doing this for executive CIOs. Operational CIOs need to have CMIOs or clinical level CIOs to facilitate this. Because you really need contracts, doctors. In Brazil the healthcare profession as a whole are very relevant in hospitals and the public sector as well. So in order to attract them we need to speak their language. What we understood from the survey was that they are always invited to come when something is already done. Whereas the idea is to have these people taking part, blending in, in order to conceive new ideas, in order to put themselves in the place of the patients or the citizens, and understand how they want to be treated, and what their basic needs are, which is in line with the things that Dan just mentioned in terms of trying to understand what their basic needs are. We are used to doing things using technology, from a technological point of view, even when we do not have the technological resource to do things in a different way. But nowadays in which the technology is not the best limitation. We need to take the patient and the patient family and the healthcare professional at the core of the things that we do. This is easier said than done. But anyway, we need to try. Conceive new applications, conceive how new technology can be used in their favor. The patient journey, the patient experience is now something that is really important to us. I used to joke 10 years ago that the patient was the first one to take the injection and the last one to speak, but now this has changed drastically. People are interested in learning what the patient feels, and what the patient experience is and what the best result for a treatment is. Is it money, is it result, is it survival, is it quality of life? What is it after all, that the patient needs and the healthcare professional needs, and the like. We are on the verge of changing this drastically because from now on, everything that's going

to be designed is going to be designed taking this into account. However, we have all the legacy. We are not going to be able to get rid of the legacy in three months. Everyone knows that. So we need to have our agenda for the digital transformation that can cope with the old things and see how we can evolve into the newer things. Increasing the efficiency of the old systems is important, because then we can have resources to invest in innovation. Finally, I think I have the right to say that many hospitals in Brazil have innovation initiatives. A few only have a digital transformation agenda. A bunch of innovative ideas is not digital transformation. It is a bunch of digital initiatives. I feel very happy that we have started seeing at the campuses of some hospitals. They are proposing, they are explicitly saying that we need to take digital transformation and bring it to the hospital. We need to face it and bring it to the hospital. To me, this is a great surprise and a very pleasant one for people to understand that it is not simply a set of unrelated digital initiatives that you need to make the organization digital.

**CB:** That is a really helpful summary, and has encompassed quite the things that we've touched on in the last 45 minutes, which is excellent as that is bringing us up to a quarter to the hour. We'll wrap up there. I just want to say thank you to yourself, Lincoln, for joining the session, to my other panelists Dan and Mark, for your perspectives and inputs on this topic, and of course, everyone who has joined the webinar today, for listening attentively, thank you very much.