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THE CLOUD POWERED DATA SCIENCE ORGANIZATION

AUDIO TRANSCRIPT

Lisa:
Hello, and welcome to today's webinar — Intelligent Payer: The Cloud Powered Data Science Organization. Before we get started, I'd like to review a few brief housekeeping details.

Today's webinar is being recorded, and an online archive of today's event will be available a few days after the session. I'd like to remind you of AHIP's anti-trust statement and ask that you reference in the Handouts tab. The anti-trust statement prohibits us from discussing competitively sensitive information.

You may ask a question at any time during the presentation by typing your question into the Q&A box located on the right side of your screen and pressing enter. If you have trouble seeing the slides any time during the presentation, please press F5 to refresh your screen. We will be having polls today. If you are in full-screen mode, you will need to exit full-screen to see the polls.

We're very fortunate to have with us today Matt Arellano, Dr. Oleg Kucheryavenko, and Andrew Thompson. Matt Arellano is a managing director in Accenture's technology consulting practice. Matt's focus is on helping healthcare companies understand, manage and govern data more effectively to drive outcomes. With over 17 years of experience across all facets of healthcare, Matt's experience has helped us shaped the way leading healthcare companies manage data.

Dr. Oleg Kucheryavenko is the health cloud strategy lead for Accenture Health. He is a visionary physician executive who brings together clinical, operation, financial and technology executives to explore the value of the cloud and to identify and apply cloud-based technologies to shift existing payer and provider business models to the new.

Andy Thompson is a managing director in Accenture's health and public services business. He is the northeast innovation lead, and the healthcare technology advisory lead. Andy focuses on modern architecture, journey to cloud, intelligent automation, enterprise agility, block chain and enterprise technology transformation.

At this time, I'd like to turn the floor over to our speakers.

Andy: Hey there, it's Andy Thompson. Glad to have everyone on the call today, thanks for joining. We're incredibly excited to share our point of view. And there's going to be an opportunity at the end for questions. We'll also take time for a little bit of polling. So, asking questions throughout and getting your feedback just to get a sense for the audience, and how you're thinking about a few of the topics that we're discussing.

So, I'll go ahead and get us started. Obviously, this is very focused in terms of the topic on cloud-powered data science. But I really want to start with a little bit of a step-back look at how we are, kind of trends that we are seeing in the cloud space more generally in healthcare. We'll talk a little bit about how partnerships are really enabling the way — especially when it comes to driving innovation. And I'll also speak to a little bit on how to get started — some thoughts from a cloud-strategy perspective. And then we'll turn it over to Matt and Oleg to continue.

So, with that, hopefully everyone can see. I'm on Slide 3. I just want to start with just an acknowledgment that, you know, top right-hand corner. You know, there's a chart there that really shows where, at least, we think our payer industry clients are at. You know,

which is kind of in that early-adoption phase. And I think while that is true, there is a tremendous amount of, I would call it momentum, around the conversation around cloud. And frankly, the action around cloud.

And I think many of you in different organizations are probably thinking, either yeah, we're along the journey. Or we're just getting started or so on and so forth. And everyone is at a different place, but I see the potential, absolutely, taking off. And I think the reason for that really is all around data and the power of unlocking data, and the power that cloud can play in terms of a role in enabling that.

So, on the left-hand side, just a quick couple of thoughts on trends. And I like this framework around more, less and stop. Let me just highlight a few that I think are really important. First of all, from a more perspective especially when it comes to data. Increasingly, the ability to have an impact whether it be on operational process or clinical outcomes. The ability to access in real time, insights, to be able to make decisions faster and to be able to do that using advanced technology such as artificial intelligence and machine learning. The cloud enables that in a much more efficient way, much more seamless way. And I think it's accelerating us towards that future.

I think from a less perspective, really the ability to move quickly. I think I've been working in the industry for many, many years. And I think thosecompanies that have really embraced the cloud are proving that they're able to move at a pace which is much, much more rapid than traditional approaches from a capability perspective.

And then I think from a stop perspective, the idea of setting up data sets in different places across the organization and using them in isolation. And kind of fit-for-purpose, I think, is always going to be important. But the idea of combining data sets. So, stop creating data silos and really start creating data sets in the cloud that can be leveraged together to create new value.

So, those are some of the trends, I think, that we're seeing. And I think the momentum really is showing in some of the feedback that we get from our clients. As example, we do surveys all the time. And some of he surveys that we've shown, show that as example, you know, 43% of our healthcare client executives are really saying to us that cloud is going to be a critical component of their strategy in the near term. I think that really says that cloud is not only coming, but it's here.

There's some other statistics here that I think are important, but I think the key takeaway is that, you know, cloud is an enabler of innovation. And it is here to stay. So, let's move on, and I'd like to get a quick poll of the audience, get some feedback going. There's a polling feature in the tool and you can quickly respond. But what we're looking to understand is the degree to which your organization is prioritizing cloud investments and partnership, and within what parts of operations. And we'll give a couple of minutes for the group to respond.]

[PAUSE FOR POLLING]

Andy:
I'm trying to see the poll responses. Is the poll showing? OK, well in any case, not able to look at the poll tab. Thank you. Oleg, if you're able to see the responses, that would be great. OK. I do see them.

So, we've got 11 people so far saying top priority to delivery improved experiences in top-line benefit. So, around 46%. You know, four saying moderate priority to demonstrate innovation and leading thinking. And two showing top priority around admin costs. So, it looks like the majority of folks, and then we've got five folks who have answered around minimally, and two, not at all.

And so, definitely shows a spectrum. And I think the idea of improving experiences and top-line benefits kind of, winning the day in terms of where the conversation is among the audience is, I think, a reflection of where a lot of the focus we see in the market. To be able to, you know, obviously when we think about cloud, we think about the AI and the ML. We think about the innovation that's available. I do think that it is about experience and I do think that it is about growth. That is really, I think, one of the most important and critical things when we think about cloud.

So, let me talk just quickly about this idea of partnerships. And I think everyone's been reading in the press and whatnot about different partnerships. And I just want to underscore that, at least my perspective is, you know, when thinking about a cloud journey and when thinking

about unlocking this innovation — especially when it comes to end-customer experiences — partnerships are going to be a critical aspect.

And we're seeing some big brands coming together. Humana and Microsoft, I think is highlighted here. I think that's very interesting. I think we've seen Google playing in this space as well. And I think the idea of bringing the hyperscale cloud providers — not just from an infrastructure perspective and what they offer from a cloud perspective, but an innovation perspective — is absolutely, I think, one of the biggest trends that we're seeing. And one of the things that I expect, you know, to be continuing moving forward.

A couple of examples here that are highlighted. Blue Cross, I'm sorry, Blue Shield of California and Notable Health coming together. This is around their Altais business unit. And they're using Notable's AI technology through the Apple Watch to enable physicians to be able to do note taking. And really, the reason is not just to make the physicians experience better to they can spend more time with the patient. But it also helps with a more accurate and complete claims processing. So, this is an example of a partnership with more of a start-up delivering value within the context of cloud.

And then the idea of Centene and Walgreens teaming up. This is around their Rx Advance, teaming up with [audio cuts out] PBM model. Which is really focused on, you know, not just the tradition PBM value sources but also, looking at, you know, drug impact of medical cost as well as more value-based arrangements around specialty drugs. And all powered by the cloud. So, partnerships, I think, are going to be helping not only you all transform, but also tap into the investment and the resource of, you know, may need it to move forward.

And so, as we think about cloud strategies and evolving cloud strategies, kind of, three key things that I think are going to be moving us forward in a big way. I think first, innovation. So, cloud is not just an infrastructure play. It is absolutely an innovation play, and that's, I think, hugely important. And I think in cloud conversation we're having in the industry is very much focused on that.

I think second, data on cloud — and I'll let Matt and Oleg kind of unpack that for the group here shortly. And then finally, one of the biggest challenges and opportunities I think that we have in our industry is, really unlocking that data which in our industry in many cases then, is locked in legacy systems. So, you know, architectures that enable that data to be freed. And to be able to decouple is going to be an essential part of any cloud strategy moving forward.

And so, with that Matt, I think I'll transition it to you to pick up with how we think about data on cloud.

Matt:
Excellent. Thanks, Andy. Appreciate the time everybody. So, I'm going to speak to you a little bit about how we think about data on the cloud — some of the trends we're seeing in migrating, which is always kind of the key sticking point. And thoughts on multi-cloud and again, how organizations are evolving.

One of my favorite quotes from Shale Jane [sounds like] who leads North America data for us is, "[inaudible] nine years ago said software's eating the world. We believe data is feeding it." So, with that, I'm going to talk about how we think people are going to start consuming it. So, most important, so at a macro level from a benefit both to a payer as well as other leading organizations, right. We're seeing the acceleration of time to value really being, kind of, one of the key areas of cloud development from a data perspective.

So, like, most things in our everyday world, right, data has evolved. We have data in multi-structures, multi-speeds and different locations, right? So, I believe — and I think the industry is reacting — that cloud really allows us to understand, manage and use that data in ways typically constrained in previous environments.

So, legacy — and we'll get into this in the next slide, right — you were really tethered to a data environment that allowed for single consumption. Maybe an additional consumption pattern. But through the cloud, having this self-provisioning capability, responsibility though, right? You allow yourself to manipulate and form data in a number of different structures to really enable the data-science capabilities of the future.

So, we believe — represented on the right-hand side here, right — the benefits are, this real-time, compute-intensive algorithms, right?

So, as we're getting to a much more digitally enabled age, one of the big issues that I hear from most of our payer clients in enabling data science models is, it's either latency of the data. They're waiting for the engineering team to extract and engineer these new features. We can't go real-time because of our constrained technology, right? So, the cloud allows us to do that much more seamlessly, right, whether it's through things like API gateway or Eventbridge from AWS that they rolled out.

Again, really getting to, kind of, that true real-time, potentially Lambda based architecture, provides us the ability to cater to our members in much more real time — whether it's consumption of ADTs, whether it's driving the next care plan, whether it's driving the next interaction. As you're seeing the influx of data — social and others — we're going to need to cater to our members in a much more efficient way. And a lot of that's going to be through real-time channels. So, first and foremost, we think that's a key differentiator.

We talk about infinite storage and compute capabilities. And kind of, the pay-as-you-go model, which is obviously very appealing. But that needs to be done responsibly, right? You need to understand when to spin up containers, and ultimately, take them down. It provides the data science community to ability to have, again, this infinite amount of compute but needs to be done very, very responsibility.

So, governance in the cloud becomes very, very important, 'cause you don't want to have these run-on conversations around, kind of, billing and payment, so on and so forth. So, that charge back model, that governance model, while you have the ability of infinite storage and compute, responsible is kind of the key word that.

Access to leading edge tools. So, one of the most important points, and Andy talked about this in the way of innovation, is now I have these tools where I can manipulate, manage and use this data much more seamlessly. So, in the context of your [inaudible] environment, right, if I wanted to run a pilot on a graph tool — and we'll get to an example later on — I would have to figure out the graph tool. I would have to procure the tool. I would have to stand it up, right, purchase the infrastructure. Potentially get a visualization tool for it, and then potentially some machine-learning libraries.

You can do that all self-contained in the matter of, you know, minutes, hours, right, in the cloud. Self-provision this, pilot the graph, look at the communities, look at the nodes, the vectors. And ultimately, drive some level of data science through embedding technologies on it. That, to me, is one of the key points of the cloud here. The ability to quickly unlock innovation to drive outcomes for your member base, your providers and all the constituents.

Security, so probably the number one reason why cloud programs stall is because of security. But we see time and time again, from the big three, that their ability right, to understand and utilize security services far outpaces that of most of our clients. Because the sheer size and investment. Again, it comes down to ultimately how you manage, both from a perimeter and a data security perspective. But the services that they offer and their best practices are by far, leading edge. Coupled with their HIPAA-compliance services, right, you really have a best-of-breed architecture.

For instance, at Reinvest this week, Amazon just rolled out their Textract medical service, which his basically text extraction with a medically based ontology underneath it, which is HIPAA compliant. Again, something that on trend, would take the ability to use a text extraction tool plus a medical ontology, and ultimately have that HIPAA compliant. You're talking about weeks, if not months.

And as mentioned, right, the ability to self-procure some of these tools. So, whether it's new sets of machine learning libraries, whether it's text, whether it's natural language processing, imagine, right, looking at other services from voice to text and transcription. All of these tools are at your fingertips. So, again, it really allows you to harness the value of data in the context of that database structure, new emerging structures and ultimately, the new data-science tools that you have at your fingertips.

And now, I'm going to spend a little bit of time talking about the evolution of data, which I think is really important. Not only in the context of the data hub, but also the cloud in general, right? So, Enterprise Data Warehouse is Data Lakes. We started, you know, in the '90s and the 2000s with your data warehouse. But again, although rigid right, it did provide value for the organization — reporting, visualization, so on

and so forth. But a lot of that was based on, kind of, you know, this early binding data architecture where you're trying to answer all your questions upfront and not allowing the organization the ability to really be innovative and hypothesis driven.

Enter the Data Lakes of the, you know, 2000s, 2010, 2016. It kind of took us to the opposite end of the spectrum, right, where most people were dumping all of this data into the environment. Really helped to unlock some initial data science use cases, but the ability to operationalize and the ability to actually take into action, right, because of real-time constraints and others. And frankly, infrastructure. A lot of those who do project fell down, right? Still used in pockets for data processing, but the ability to use that environment, right, for multi-purpose, just unfortunately never, never, um, really manifested itself.

Come these Data Lake polyglot environments, right, multi-use, again. Whether it's for real-time, whether it's for reporting, analytics, machine-learning based patterns. Now the cloud provides you this logically, this place, right, this zone-based architecture based on good data architecture practice, to move and persist your data into a number of different features and formats and start to drive next-generation capabilities on it.

So, not only does the cloud and the data hub allow you, kind of that late, binding architecture, which is kind of the godfathers of data warehousing, you know, Kimball and Inmon would say that they missed. But that concept of, kind of, light business key formation of your data, your members, your member keys, your NTIs for providers, right? That cloud-based data hub provides you this ability to structure and utilize data in ways that would take weeks, months and years in the past. I think we've all seen that through some of these Data Lakes projects.

So, next, we're going to do a little bit of a poll. So, question for the audience: To what degree is the organization modernizing it's data platform in a cloud environment? So, full organization push towards the cloud, inclusive of data platform, analytics and enablement? Some data workloads and analytics being delivered in the cloud? Developing of a cloud strategy but no execution thus far? Or none at all, still focused really on the on-prem enablement? And we'll take a second for the audience to respond.

And again, as you're thinking through this question, right, when it's full organizational push, right. So, really, starting to kind of persist these workloads and these insights, you know, downstream into the applications. Really making this the fabric of the organization, right? Versus some of the kind of, mix-works workloads, right? We're starting to deliver some of these analytics. We're moving some of these data processing pipelines to the cloud. I think we have about 15 responses, and we'll give it 30 more seconds.

[PAUSE FOR POLLING]

Matt:
OK, so, thank you. So, as it relates to the responses here, we have about 53% of the participants saying some data workloads and analytics being delivered on the cloud. Which is obviously fantastic and kind of going to Andy's point, right, that we're seeing that evolution, right? Most organizations are at least thinking piloting or starting to move there. Versus, you know, about 13% actually have a strategy developed, right, or are in the process of developing the strategy.

And probably most importantly, 20% of the respondents said, none at all. Still focused on on-prem, right? So, as it relates to the migration and kind of thinking about that, right. Hopefully some of these point throughout the presentation are giving you a little bit more to think about. But, thank you for focusing on those answers. So, we'll keep moving.

So, I think, again, there's a number of ways to unlock these architectures, right? But let's talk about, you know, through some examples of the data hub concept. How it's driving, kind of, strategic data transformation, right? But before I do that, one key point that I think leads organizations to understand the value of data is, if you look at it, data-driven companies have a higher return on invested capital than non-data-driven peers, right?

So, ultimately, the ones that are harnessing, that a utilizing data, are seeing a significant return on that investment. And that comes with the responsibility of AI. It comes with the governance of data, right? There's a number of things that go into that. But the ones that are truly taking a top-down approach to enabling and unlocking data are seeing that, you know, that investment pay back in spades.

So, you know, in healthcare, we've seen an influx of data, right. So, we have our claims, labs, images now, right. So, DICOM images. I don't know if anyone's, you know, playing around with DICOMs, but now through, you know, image analytics, right, we obviously have that capability. Clinical, genomics, the whole goal here is to start to refine your information, not unlike you've done previously, right? But through good quality and start to individualize based on our consumer profiles, your membership information, your providers, your claims.

But most importantly here is that analytic sliver, right, is a lot of those services are self-contained as platforms-as-a-service options in the cloud, right. So, you have machine-learning pattern, as we talk about in the context of Amazon and things like SagerMaker, natural language processing. You've seen medical comprehends around now for a year, image analytics, right. And ultimately, search.

And what this is helping the industry to do, right, is to use things like population health management and population health statistics. But really, to help that to drive and inform precision-based medicine, right? So, you're seeing, kind of, the populations and the information of many drive the outcomes of a few, which is really, really interesting. And again, the scale at which you can do this now, and ultimately utilize things like genomics to get much more personalized, is something that we just couldn't do in the past unless you had these supercomputers, which most organizations could never ultimately phantom.

Marketing optimizations. So, I talked about this in the context of, kind of, outcomes and infusing what would be the next action for a patient, right. But now we can deeper segment versus, oh, you know, with all of the data that we have available. We talk about social determinants. We talk about social data in general.

Most organizations are buying a number of third-party datasets, whether it's things like Axium, whether it's other, you know, features that we can engineer from third-party data like, D&B. But again, this allows us, right through the ability of to have, kind of, all this compute at our fingertips to do much deeper level of segmentation and analytics.

And finally, as it relates to kind of the enablement here, right, this is all for digital enablement. Most of these programs, right, digital is data. Without data, there really is no digital program, right. So, whether it's access to care and providing better search, right. To understand physician specialty location, whether it's matching patients to the proper physician, right? And ultimately, expanding kind of the opportunities for these partnerships.

You know, these data platforms — cloud based — are providing these added advantages that ultimately the, these plans, right — you as payers — could expose to the constituents across the value chain. Your patients, your members, right, your prospects even pre-activation, your providers and the value-based contracts that you're entering into. And all with the eye towards well, consider in that bottom right-hand side. You know, responsible data monetization.

So, you start to collect, you start to see more vertical integration. You start to see more of these partnerships that Andy spoke about earlier, right? Data will be the backbone of all of those. You're seeing a lot more entrances into the marketplace from places like retail, trying to get into health by enabling your next-generation data platform on the cloud.

Managing all of that information efficiently and leveraging some of these platforms-as-a-service tool, you will insulate yourself from some of that competition out there, right? You'll have the scale. You'll have the tools and you'll have the focus as it relates to data. So, really important.

So, cloud-based data science. So, you know, I think one of the most interesting things here — and we've talked about it a few times, right — is again, this decoupling of storage and compute. We have heard for years, even in the context of a dupe [sounds like], right, that you're tethered to the infrastructure of [inaudible]. So, time and time again, you know, someone goes out and as one of my clients said, runs a gnarly model. And through that gnarly model, they basically render the cluster useless, right. Because it's spinning for weeks, days if not weeks, right?

So, now again, we could do this responsibly. We can give, you know, your data science community as most organizations are scaling out that skill right, the ability to run whatever models — responsibly — that they see fit. But more

importantly here, as you go from that continual data to information to knowledge and wisdom, the ability to democratize analytics is not at our fingertips. Again, by leveraging some of these platformed-based services — platform-as-a-service — they actually help and guide you towards what would be the best algorithm based on the features and the data that you have available, right?

Which is really leading edge, compared to actually having a data scientist or a group of data scientists having to sit down and continuously think through what would be the best optimized model. A lot of these services now provide you that ability. But it provides you the ability, again as I mentioned, through a number of different containers or database structures. So, whether it's an object store, a traditional relational database, a NoSQL, we can now structure the data as we see fit to drive the best outcome. We can then leverage the best analytics, again, based on what's available in the cloud. And we can help to drive that back into the fabric of the enterprise.

This, in general — as it relates to, kind of, that paradigm shift or the outcome — would have taken, you know, weeks, months, years to operationalize a single model. But now, with all of these features at your fingertips, right? People can do this and get that data back into the fabric — whether it's through Salesforce or your care-case management applications — very, very quickly. And that prospect that we're seeing and the payers that we're seeing taking advantage of it, are truly leap-frogging the competition.

With that, I'll leave you with one example, which I think is very powerful. So, I talked about the structure of the data, the ability to spin up different database containers and apply new and leading data science or machine-learning based patterns. So, as I spoke about previously, graph if a great representation of that. So, graph in healthcare to me is the next generation of databases, right? So, healthcare data is much better represented in a graph — a relationship-based approach — rather than rows and columns. And we've seen this in spades from some of our payer customers that are starting to embrace it.

But the ability to look at, you know, natural although unknown and sometimes unnatural relationships, provides great, great capability. So, I'll give you an example, right? In the context You can load the data. Again, it all comes down to the data and the structure. Start to develop these nodes, right? These nodes, these edges, these vectors. And then, by developing more machine-learning based patterns through embedding technology with a visualization or a representation or UI, right, you could start to look at things that we've seen in practice like fraud rings, right?

So, providers that we know have similar characteristics or relationships as other providers that either have bad prescribing habits and/or just ultimately bad physician characteristics as it relates to how their driving care. How they're actually driving referrals to other providers in network. So, that piece of fraud analysis, we have seen produce significant amount of bottom-line savings. So much so, that we've seen payers actually taking providers out of network because of this nefarious behavior. This type of analysis would have taken weeks, months, if not years to try to do through traditional, kind of SQL technology and others.

Next up, is kind of the referral network, as I had mentioned. So, just looking at how — as you're driving into risk-based contracts — how providers are referring either within or out of network. And educating your providers on other providers that might have the high, you know, high or similar level of quality, efficacy and ultimately, cost. So, you're helping to manage some of that, you know, cap-based revenue. So, again, really important here.

This is a great representation of, if I in a previous life wanted to do this on-prem, I would have had to procure my own graph technology. My own UI technology, my own embedding services, right, and ultimately, that delivery of this use case would have taken months. In the cloud, I can self-provision the environment. I can ingest the data. I can use embedding technology and I can get value in weeks. And that, to me, is one of the biggest critical levers — if you will — of the cloud.

So, with that, I'm going to hand it off to Oleg. I appreciate the time today. Oleg?

Oleg:
Thank you, Matt, and good afternoon everyone. So, let's talk about how do we actually think about enabling applications and capabilities. Many executives want to migrate their infrastructure to the cloud as fast as possible.

But realized that the cloud adoption journey was all the necessary operational technology, and culture change just takes time.

So, along the journey, organization need a way to keep their legacy systems up and running. And that's how hybrid architectures get created. To give the most of existing investments while transitioning to the public cloud. So, most payers have large legacy systems, and will run hybrid cloud architectures for several years, while they adapt cloud-first strategies and modernize their existing applications.

And for applications that must stay on premises in their data centers, for high bandwidth, low latency connectivity, they can actually be refactored to leave on-prem hybrid cloud solutions while easily being migrated in the future. And we know that AWS, for example, made generally available their new service — AWS Outpost. And Azure has the Azure Stack. So, hybrid cloud allows you to take small steps towards public cloud, and gaining quick winds, perhaps replacing your legacy on premise data backups with cloud storage.

And what we see is that leading healthcare organizations move to the cloud to actually take advantage of this capability that their data centers don't have. So, actually, the economies of scale and true elasticity, unprecedented pace of innovation. And we see that over half of business-enabled technologies and services are actually built to be cloud-only. Better security posture and the consumption-based model where you pay-as-you-go for what you use.

And we see that analysts actually agree that over half of old platform-as-a-service offerings right now, live [sounds like] exclusively in the public cloud. And at some point, your cloud organization will demonstration to you business unit that cloud brings agility and speed, automation, real-time ability to scale and access to your managed services that only exist in the cloud. And in my conversations with executives, I see that they realize that it's harder and harder to answer the questions why we shouldn't use cloud.

That said, healthcare payers — much lower than other industries to the cloud — they tend to migrate up to 10 to 15% of their applications to the public cloud. And they take typically stop. Why? An executive usually lists these five reasons for why their cloud journey slowed down. So, the first one is, they had other factors. We know that many healthcare payers grew through mergers and acquisitions. And applications that they have are very complex and comingled. So, their application teams sometimes don't see the value in a lift and shift, rehosting approach.

The second problem is the technical debt. The healthcare industry overall, has some limited relative to disruption. And as a consequence, addressing technical debt has not been as prioritized in many organization as in other industries.

The third problem is complex operating model. Operating in cloud is very different, and many technology leaders invest heavily into technology, but very little in the people and the organizational change. They will ultimately enable many of the benefits of going to cloud.

I want to mention the running cost and the visibility around chargebacks and show back, because visibility around chargebacks does not occur at scale for many payers. And as organizations move along their cloud journeys, there's work to be done to reinforce this culture. You build it, you own it to optimize running costs.

And finally, like I mentioned, the culture component. Even if we define and begin to implement a cloud operating model, most lines of business that have fabric environments will be challenged to [inaudible] the culture to think cloud, to think agile and DevOp product centricity, developing horizontal skill sets, and subject-matter expertise within each team. In other words, this is the new way to operate in the new cloud world.

So, but when talking about barriers, I think it's important to speak about enormous opportunities. And they're limitless, when you look at what cloud has to offer. And I think it's time to acknowledge with our healthcare-peer clients, that this is no longer a lift-and-shift conversation. We're no longer looking into one cloud and one vendor, and this impulsive decision to move all of your data over to the cloud. This has to be aligned with your business strategy, and what business goals here are actually trying to achieve.

Second, the beauty of cloud is that if approached strategically, you're applications should look for the correct, lowest cost, highest value add

platform. So, we're now looking into, not just multiple clouds. We are also looking into multiple layers, or as we call them at Accenture, strata. And strata represent different cloud computing service models — traditional hosting, infrastructure, software and platform-as-a-service.

So, your business needs — for example, setting up a data science organization for better payment integrity of better population health analytics or improved patient experience — will actually guide you towards the most appropriate services that your entire is going to consume. And if your business strategy will lean towards use of artificial intelligence and machine learning, as we're seeing in the market, it's very likely that you are going to land on a very cloud-native platform because the greatest value of utilizing these services is actually being cloud native.

So, when do we have these conversations with healthcare payer executives around cloud transformation? It is really about understanding the long-term strategy of the business, which dictates the use of certain services and how and what applications will lend to which cloud and layer, and the pace of that cloud transformation. And this way, we start by understanding your business drivers and move towards your IT efficiency in application enablement.

On this slide, you can actually see what it typically translates into when we go into the cloud transformation with our healthcare payer plan. So, pulling all of this together, you can see a possible model where there will be multiple clouds as a possible target. They're roles in multiple strata in each cloud, and we'll look at the application where [inaudible] there will be multiple dispositions about how we take that application and move it to the right place where we can get the greatest value for the lowest effort and the lowest cost.

And the ultimate goal for the cloud journey, is to derive a maximum business and strategy value, and IT optimization at the same time. So, we see that payers rarely have a chance to rearchitect their applications to be cloud native as part of their cloud migration, because it requires the coupling of monolithic applications into services with APIs. But over time, cloud innovation actually ends with turning to fully managed services. For example, a AWS-[inaudible] for real-time processing or as your [inaudible] DB for databases or Google Data Studio for interactive dashboards.

And what you need to understand is that developing the best queuing or messaging or API-management solution is very unlikely to move the needle for your payer business. Rather, it's your algorithms and business [inaudible], and your real-time analytics that will benefit your internal and external end-users and customers and help grow your business. So, this is where your operations teams transforms in the truly agile, high-frequency, enterprise model — DevOps model — with new governance and compliance frameworks. And your security shop accelerates by embracing DevSec Ops and start actually exposing the security capabilities through APIs.

So, on this slide where I wanted to show that crossing the cloud maybe divide, can actually yield great rewards for payer enterprise. And for businesses, this means that enterprise computing is only going to get cheaper, simpler and easier. And will generate increasing amounts of value.

And now, I want you to do a quick poll. Let us know what your organization business drivers are to move to the public cloud. You can check all answers that apply — cost optimization, collaboration and partnership, digital enablement, access to innovation and data science and improving population health outcomes. Let's give you 30 seconds.

[PAUSE FOR POLLING]

Oleg:
The answers are coming, and I see that the majority of answers are around improving population health outcomes and cost optimization; 24% of people said that cost optimization is their business driver. Twenty-six percent of respondents say that it's improving population health outcomes that is a priority. And data science is 21% — nine answer. So, thank you very much.

So, how do we actually talk about cloud strategies and how do we start thinking about the strategic value and business value over the IT and cost optimization conversation? So, in the current healthcare market, executives are under increasing pressure to deliver cloud transformation results quickly. To be better and

faster at achieving population health and business outcomes than their competition. But getting fully set up for success should not prevent you from getting going. Just start, and remember that you're cloud journey is about your people as much as it is about technology.

And we see the barriers preventing cloud adoption are not solely technical. It's lack of leadership alignment. It's lack of cloud skills and proper talent. It's about business units not seeing or understanding the business and the strategy value of the cloud. And it's also governance processes and application teams [inaudible] you built it you own it mindset and culture. And lacking visibility of chargebacks and show backs.

In my experience, it is critical to have support of at least one executive leader during your cloud transformation. It can be the CIO or directed [inaudible] of the CIO, who can lead the effort and be visible everyday to provide direction and remove obstacles along your cloud journey. And other executives should be aligned too, to reinforce the profound benefits of moving to the public cloud across the spectrum of cost, security and speed of product development.

It's important to remember that all perceived challenges along your cloud journey should be looked at as opportunities instead. And when you have a conversation with your executives, talk about the cloud value. Work with your executives first and help them understand the cloud value. And then communicate that value to a broader organization.

I joined Accenture's health cloud business grow because it is aligned with my vision. As a technologist, health economist and surgeon, I get to bring together business — clinical and technology — executives together and help them understand the strategic value of cloud. And what I see in the healthcare market right now, is this shifting conversation around cloud transformation. Payer market is facing a number of new disrupters, which means there's no more room for incremental change. You must make big, transformative changes to your business models and your operational processes.

And currently, when you think about the data science organizational transformation within your payer organization, you should think about that transformation in the context of the public cloud. And it's critical. It's critical because it will help you maintain and increase your market share. But also, it will help you remain meaningful and relevant in your market.

And one executive told me recently that he views his cloud journey as a chance to reinvent the business. To enable that cultural experimentation within the company and enable data science to change, not only how healthcare is delivered and paid for, but how data science is perceived by his staff. And most importantly, it makes you competitive.

Cloud can deliver you IT value, but most importantly, it will enable your business strategy. And it will allow you to do things in the cloud that no one even imagined five or ten years ago. So, think of this strategic value as the cloud platform enabling your collaboration with others in the healthcare market. Using data to accelerate ideas in the healthcare market. And cloud gives you the ability to speed up new data-driven products, as mentioned, with superior performance. And it actually enables data science innovation.

So, when we talk about the cloud experience and cloud journey, you need to remember the cloud experience is a very different experience for many different organizations. And it's more than a technology shift. It also offers a new way to do business. And as I mentioned before, it creates a new culture of experimentation, particularly for large healthcare payers. You no longer need access to capital to experiment. No need to justify your return on investment on capital investments with the consumption pay-as-you-go model. Your team can launch a cloud-based project including data science, pilots and shut them down within minutes or hours.

There are not costs to absorb for projects that don't work out. Sometimes, you know, sometimes things don't pan out as planned. And it hurts to have assets on your balance sheet that didn't meet your expectations and that you no longer need. But with the power of cloud, you can actually deploy a fleet of high-performance compute instances to do your data science work workloads and shut them down if the project is not working out.

The third that I want to mention is, that the cloud is all about automation and better governance. Your teams become able to spend time developing products that impact your company's bottom line. They can focus on things that matter

And many healthcare payers that I work with, they choose to [inaudible] their talent to lead data science projects, and to generate greater business value through data science.

And finally, and I think this is very important, is that realizing your business case for cloud is just the beginning of the cloud transformation journey. And as you move to cloud-native and cloud-first based you will constantly optimize by fine-tuning the infrastructure that's allocated for each application. Or by refactoring traditional platforms to use, for example, a serverless model. So, you need to think about optimization as an ongoing effort. And you have to prepare yourself for an ongoing optimization project. And your agile team will have to prepare to adopt new services as they are released by cloud vendors every year, and map these services to the existing application portfolio — to continue to improve and to increase the business value of cloud.

And finally, everybody's talking about security. And we see that the leaders in finance, investment banking, insurance industry, they choose to be in the public cloud because they perceive it as very secure. And it is, indeed, very secure. And in our survey of CIOs, 40% of CIOs we surveyed acknowledged that the public cloud is actually more secure than either private cloud or on-premise data centers.

This uncertainty about how to translate existing on-premise security policies and practices to public cloud, and where to adapt or change, [inaudible], and in design and implementation of the cloud. So, I can't emphasize enough how modern applications in the public cloud are enabling more secure than their own premise and private host counterparts.

So, with the public cloud, for example, the default security posture is to deny access. So, users and services need to be explicitly granted permission to access. So, nobody can access your data, unless you want them to or unless you've permitted them to. So, this is the inverse of on-premise environments that are open by default and where policies are manually applied to limit access. So, I'm very passionate about health cloud strategy. And I think the future of the healthcare payer market is in the public cloud.

So, I can talk about health cloud more, and how we can leverage your data transformation as a pathway to the rest of your organization's cloud transformation at length. But it is time for me to give the floor back to Andy. Andy?

Andy:
Thanks, Oleg. Appreciate it, Oleg and Matt. I think what we want to do at this point is open it up to questions to the group. Hopefully some of the ideas and thoughts that we've shared around the cloud trends and, kind of, what we're seeing in the market. Kind of, a click down on data and data science and then, I think the really compelling close, Oleg from you, hopefully we get some good questions here. So, feel free to ping them in the window. And Lisa, feel free to raise any of those questions as they come through.

Lisa:
All right, I'll start with the first question that came in. What are the biggest barriers to starting the cloud journey?

Andy:
I'll go ahead and start, and Matt, maybe you can build on this. I think Oleg addressed a bit of it. But just, I think what I am seeing mostly in terms of barrier to cloud journey is one of a talent barrier. And I think about this when I say talent, I think that's both from a staff perspective as well as frankly, from a leadership perspective.

I think more and more, the leaders of the organizations that we're working with are absolutely, kind of, you know, I would say sort of educated and understand the value of cloud. But the barrier that I see is at that next level of leadership. The teams that are in place and the leaders of them, have been used to operating in traditional environments. And so, getting the momentum and frankly, making the case has met with a lot of barriers. And I think many of those barriers are talent barriers.

Matt, what are your thoughts?

Matt:
Yeah, I think you nailed it. I think it's kind of that middle tier of inertia, organizationally, that we see that strategically, the goal is to move to enable this next generation of data usage and data science. But again, the fear of that change, specifically in a traditional payer, I think sometimes holds back the organization from really helping to, kind of, unlock and monetize.

And the one that hear time and time again,

I think we hit on a few times throughout the conversation, is security, right? But if you look at the investment in cloud, again, responsibility setting up these environments, right? They are much more secure than anything you could deliver on-prem. So, I think strategically, it's that middle tier of inertia. I think a little bit more tactically, it's the strategy around security and ultimately, perimeter down to the data level security. So, those are my two thoughts.

Lisa:
OK, thank you very much. Our next questions is, can you provide example of monetizing data sets by sharing data with third parties? What payment function needs to be installed to pay per use?

Andy:
Matt, what are you thoughts on that? Otherwise, I have some thoughts.

Matt:
Sure. So, you know, monetization I think, come in a few different shapes and forms, right? I think there's the ability to internally monetize, right. Which with proper chargeback models in place, ultimately understanding usage, and obviously, the cloud gives you greater ability to do that. Both at the account as well as the person level.

Andy:
Sure.

Matt:
So, I think unpacking that into monetizing internally versus how people use, right the database, the usage, the compute is really important. 'Cause as you start to evolve to less of this typically cap-X, op-X model and more around kind of, the agile nature of streams and value cases, I think the cloud gives you a better opportunity to monetize.

On the pure external monetization, I think you're going to see some, kind of, new and emerging potential options start to emerge, right? Whether it's from some more of the retail-based organizations getting into healthcare or from traditional payers. The ability to, kind of, take your traditional claims information, now coupled with the clinical information and this social data, I think there's going to be this new emergence of monetization opportunities back into the P&C world, right? Potentially back into the retail world.

And again, now having, again, most health payers, right, have the financial transactions of health. Now that you're coupling that with the social understanding of these patients and members, now think about it in the context of their purchasing preferences from places like Kroger, with their environmental information from ultimately, you know, things like Nest and other data sources that are available. The ability for the payer to truly build that longitudinal record of member, patient and consumer information, I think, is going to be highly important.

I do think, that obviously, there's usage implications. There's consent implications. But at a foundational level, the payer will have one of the richest sets of information. And the way that ultimately, I think you'll see in first monetization that you see in other industries, is the anonymization of that. So, allowing organizations just to understand, and specific geos, right. Or not down to the patient level, what information is available to drive research, studies, clinical trial enrollment, so on and so forth.

So, again, I think unpacking monetization is first. And optimizing, kind of, the costing channels internally. And second, through that full information and, kind of, lineage and history of the patient. Looking at the channels in organizations that might be interested, specifically, in an anonymized case. But as we start to evolve, I think you'll see more full sets of information for payers and other organizations. Andy?

Andy:
I think that was a very thorough answer. I would just also add that one of the trends that, at least from some of the — I would say the — larger integrated payers and even those that are working closely with retailers are focused on, is when they use those combined data sets more effectively in a built, analytic engines that identify gaps in care and next-best action associated with those gaps in care. Exposing those analytic models as APIs to, especially fully, in more of a self-insured population is something that I am seeing a little bit more of.

So, the question, making money on essentially doing what we've been trying to do for years and years with the patient the payers have access to. But also, sharing those analytic models through APIs with other entities who are bearing the risk, like, self-insured employers. So, lots of, I think,

energy around [inaudible]. I think [inaudible] the other day, which reminds me how important this type of business is, and will be, is that I think, 50% of the [inaudible] comes from the [inaudible] business unit.

I think when I read that and I was discussing it with a client recently, it really sparked, I think, a renewed interest and focus to talk about data monetization. And it's not just data, but it's really frankly, the insights off of that data and how can you expose that and of course, charge for it.

Lisa:
Thank you, I think we have time for just one last question. How does data privacy regulations or how are they impacting the data science opportunities?

Matt:
Yeah, Andy, I'll start. Yeah, I think three's three things to thing about here, right. So, from a data privacy perspective, you know, obviously with a drive toward GDPR globally and CCPA, right, through California, you're seeing more legislation. The ability to, kind of, understand, fingerprint, track, trace and remove data is something that we all need to be mindful of. So, as you're starting to migrate these environments and workloads up to the cloud, I think it gives us an opportunity to rethink how we actually track, trace and understand information.

So, these environments need to be, kind of, structured and really strict around how data is ultimately tagged so we understand what is PHI and PII and when a patient wants that information or doesn't want that to be used, we have the facility to, kind of, take it away, right. Which is really important. And again, GDPR is the first and CCPA, but I think you'll see an evolution there.

I think it brings up three other interesting points that we need to be mindful of. Kind of, a minimum use of data, right, both as it relates to, kind of, usage and analytics. And knowing that in data science, right, you want to engineer many features. So, you have these long longitudinal records, right, with 20,000 attributes. But again, knowing what and how to use that information is really, really critical.

Having consent from your patients and members to ultimately use that data, right? So, as these new entrances, vertical integration, you have kind of retail as well as the payer comingling and

combining. You know, the consent of how that information could be used becomes very, very critical. So, having that model, having that as a core value of the organization, minimum use, consent.

And lastly, something that we're seeing emerging more so out of industry, but we're seeing payers starting to think about it, is the concept of responsible AI. So, now that I'm using the machine to start driving insights and actions, right, how do we ensure that the machine is governed? And ultimately, the way that the model, the characteristics and the outputs are being derived, is responsible to the actual outcome. We'll save a life, right?

We'll be responsible to optimize the right channel and the right message to the member, right? We'll get that information around, kind of, that care plan, that discharge care plan to the member at the right time with the right level of information around med-rec, right? Around what they should be doing to ultimately rehab, right?

That information, and we're seeing it in other industries, but I think healthcare, we have the greatest responsibility both to the population as a whole as well as our member and our patient base to be very responsible. So, setting up your charter. Setting up your governance organizations around responsible AI is something that I would say every organization should at least be evaluating as you start to look at data science at scale. Andy?

Andy:
Excellent. Excellent, I think we are out of time and that was a very complete and thorough response. So, thank you for that, Matt. And thanks to the audience for tuning in today and hearing some of our thoughts. Good luck on your own cloud journey and data in the cloud. And look forward to seeing you all on the trail at some point soon, hopefully. Take care.

Lisa:
Thank you also to our speakers for that great presentation. This does conclude today's presentation. Thank you again, and enjoy the rest of your day.