Dale Sanders: Hi Chris, hi everybody. Thanks for sharing your time with us today, looking forward to this, this is a special event for me in particular because I get to share it with my dear friend and colleague, Tim Zoph. Tim and I worked together as CIOs at Northwestern in Chicago for a number of years, and we were involved in some of the early M&A activity of Northwestern. We managed a number of different EHR implementations, Epic, Cerner, we also interacted with eClinicalWorks, and AllScripts, and IDX Centricity. So we have a pretty good background in this and not neophytes to it.

Tim, I just wanted to say, again, thanks friend, it's really a pleasure to be working with you again, and thanks for joining the webinar. Do you have any thoughts or comments you'd like to open with?

Tim Zoph: No, just pleased to be here, Dale. I think the topic is particularly important in timing for the industry. I think everything we've seen in the industry, Dale, the activity just continues, and being really thoughtful and strategic about how you approach M&A or alliances is really critical for organizations, and especially for technology leaders.

Dale Sanders: Yeah. Agree, completely. I might have mentioned, too, that the nature of the relationships that Tim and I had at Northwestern, as IT leaders on the campus, we got together before an organizational changes occurred, to function more as a single unit. We took this notion of efficiency from an IT perspective very seriously. There was no governance structure forcing us to do this at the time, there was no mandate to do it, we just got together as friends and colleagues to do the right thing. In retrospect, I think a lot of the work that we did in IT to integrate the organization, both from a technology, as well as an application and a data perspective, laid the foundation for easier mergers and acquisitions and reorganizations that occurred after Tim and I had departed.

Well, let's jump in here and go through some of these slides, and stimulate some discussion. So, McKinsey has some interesting thoughts about mergers, acquisitions, and partnerships. I have a lot of respect for what McKinsey does, I don't think I've ever seen any of their work that I would call anything less than excellent. This is a quote from one of their reports, "Top performers across all industries focus first on data integration and have a plan to do so within six months post-merger." So they go into these mergers, the top performing organizations, with an idea of how to integrate data as quickly as possible after the merger. The reason for this is, you accelerate the value, the perceived value and the real value, of the merger, if you do that.

I have to say, in the work that I am exposed to in the industry now as a vendor, I don't see a whole lot of pre-planning around data integration in most hospital and healthcare M&A activities. In fact, what I see is an emphasis on what amounts to bricks and mortar acquisition, and then the IT and data integration that comes along is almost a secondary thought. Then, quite often, the basic KPIs of the new company are very, very difficult to produce. Basic financial KPIs, basic quality metrics that are associated with reimbursements, become very

hard to produce. Not only is it difficult to manage the new company, but you're underperforming and under-utilizing the value of the merger and acquisition until you get that data integrated.

McKinsey also says that 40% of the M&A value in healthcare is directly to IT strategy. That's pretty significant, 40% of the M&A value is directly tied to the IT strategy. If you think about the importance that IT plays in all industries, of course, particularly healthcare, 40% seems reasonable. I'd never thought of it in those terms, but I think it's a reasonable number. It's quite a bit higher than what I would have predicted, but again, quite a bit of faith in the analysis and work that McKinsey does.

Just to talk about some of the common motives behind M&As in healthcare to baseline how we're thinking about this sort of thing. Deloitte in their M&A strategy series describes the following motives. Number one is economies of scale, so there's the belief that there's more efficient use of resources, and shared services, and other infrastructure through economies of scale and combining scarce resources, so that ends up being a pretty important motive in M&A.

Second motive, moving into complimentary markets by geography or product is quite common. I would suggest to the audience you think about this in the M&A activity that you're familiar with, how do these motives line up with the observations that you have in the industry. Three is reducing risk through larger populations and revenue. Spreading your risk out, especially for at-risk reimbursements in healthcare is a big driver nowadays. Then the opportunity to improve an underperforming organization or asset and thus increase its revenue.

Those tend to be the most common four reasons and motives behind M&A right now in healthcare. So far, most studies indicate that the economies of scale and the efficiencies that should gained through the economies of scale through the M&A have not yet been realized. Either to the M&A organizations or to patients. There's quite a bit of criticism now about that pace of M&A and the fact that it's actually adding increased cost to patients rather than reduced costs that you might expect from economies of scale. So, interesting to hold these up to see if they hold water in the M&A strategies that we're seeing in healthcare today.

I have a few assertions about this myself, and I would argue that your new company's not integrated until your data's integrated. I make a distinction between data integration and application integration. Back to my premise that ripping and replacing EHRs is not a good short term strategy for an M&A IT strategy. Data integration is more important and you're not integrated until your data's integrated, and I've seen that firsthand.

I would argue that HIEs are not sufficient for data integration, not even close, they have all sorts of problems, well documented in the industry. They certainly can't provide the kind of analytics and KPI support, quality metric support, that

the new company would require, for example. You certainly couldn't produce common financial reports through an HIE. An HIE is not sufficient for data integration.

Again, my premise, ripping and replacing EMRs and ERP systems with a single common vendor is not an affordable or timely strategy. There may be some room to do that later on, maybe years into the post-M&A activity, but as an initial strategy, it's too disruptive and too expensive.

I would argue that in the digital world we face now, that M&A should be driven as much about data acquisition as it is bricks and mortar acquisition. I would encourage C-levels in healthcare to start thinking more about data acquisition in their M&A strategy and less about bricks and mortar, as the focus of healthcare moves away from bricks and mortar, out into the community and the employment areas.

The prevailing solution to integration right now, being rip and replace, I would suggest takes the better part of three to four years to finish, if you're lucky. If you believe McKinsey and and Standish, you'll be 74% over schedule, 59% over budget, and deliver 56% less value than what you predicted from that integration strategy through a rip and replace. In the meantime, your risks as a new organization are going up over time, your margins and reimbursement levels are decreasing over time. So, waiting three to four years and also putting at risk the schedule and budget for ripping and replacing an EMR and an ERP system is, in my opinion, not a sound strategy.

A little more detail on the cost to rip and replace, just for EHRs, and again, reminding us that it's just one of dozens of applications in today's healthcare systems. These are some of the typical numbers associated with EHR implementations. One and a half billion dollars for very large healthcare system, 646 million for a large, 363 million for a medium healthcare system, 127 million for small to medium healthcare systems, and a 10 to 15% drop in productivity for about 12 to 18 months during and after the implementation of a new EHR. It's very disruptive culturally and it's disruptive financially.

So, staring that down from an ROI perspective is a bit like spinning a wheel at the casino. I think there's too much emphasis and there's too much belief that it has a positive return on investment.

This is a quote from a C-level at the largest for-profit health system in the US. I sit on an advisory panel with him and I asked him a few months ago, "Would you ever consolidate to a single EHR?" His response was pretty emphatic, "Oh no, I can't imagine. We've looked at it a few times, but the total costs are in the billions, and for what? Minor incremental value? We're using our data warehouse and building a software services layers to tie them together," them being the EHRs, "Until there are better options." Just another opinion about the cost and the return on investment, the benefits of ripping and replacing an EHR.

Tim, I want to pause for just a second, friend. Do you have any thoughts or reactions you'd like to offer yet?

Tim Zoph: You know, Dale, I don't, other than just to let the panel know, too, the webinar know, that I'm going to get a little bit ... Dale's been an advocate here and there's a lot of points I would agree with. I'm going to give a little bit more balanced view, but actually, I think the facts and the context here that you've set up are really important. There was just a couple of things that I would add to your section I think that go into the equation.

The organization only has so much capacity for change and what you see in organization is not just what you write a check for, but what you're willing to commit your resources, human and otherwise, to do, and the quotient of change you have available to you. You have to ask yourselves not only, "Can I afford to do it," but, "What am I not doing?" And, "What am I subscribing my organization to do and is this the most important change available?" What I don't see, Dale, often times, is a really good balanced scorecard in this. They say this is sort of a singular view, rather than a balanced view of just, "Where am I going to place my bets and how important is this?" And, "Is this the most important change that I'm willing to sign up for as a leader?"

Dale Sanders: That's a great point, friend. What am I sacrificing if I do engage in this activity? Hard to calculate the cost of that and the impact. That's a really interesting point. It's, as you know, it's not easy to implement an EHR.

Chris Keller: Dale, if I can also interject, you've got some great questions coming in, thank you to the audience. I might insert a couple of these you might want to consider, I'll pull them away, as well, so you can keep going on your material.

Dale Sanders: Yeah. I'm happy to address these ...

Chris Keller: There's a longer one here, I think we'll wait, we asked for that person to consolidate their alternative view, and we can come back to that.

Dale Sanders: Okay. Sounds good. Okay, next slide here.

I would suggest, too, that EHRs are the beginning, not the end, of digitizing healthcare. The question is, what data do we need for research, personalized care, and community health. I've been toting this cartoon around now since Tim and I worked together, describing the high level data ecosystem of the patient at the center of this cartoon. If you think about it, for the most part, EHRs operate in the lower left quadrant of this cartoon, healthcare encounter data. To understand and provide personal care to that patient, we need to round out our content with claims data, biometric data, outcomes data, possibly consumer data, socioeconomic data, genomic, epigenetics, familial data, and also microbiome data.

If you think about it in that context, and back to Tim's astute comment about limited resources and time, the reality is, we need to start investing in the rest of this data ecosystem, and if you're ripping and replacing an EHR, you're further investing in the lower left quadrant of this cartoon. I would argue, with scarce resources and time, we need to start expanding the data ecosystem more deliberately into these other areas. So, further deep investment for incremental value in healthcare encounter data is an over investment in that portion of the portfolio.

Of course, I would suggest that, by the way, we have barely any data on health patients. Hence the need to broaden this ecosystem and start collecting data on patients when they're not engaged on the average three times per year in our healthcare systems.

It's interesting if you look back on the evolution of healthcare IT, in the 90's, we were in this best of breed environment that was knitted together with HL7. It was a good idea, but we found that it was fragile, expensive to maintain, and so we started to back away from HL7 in the late '90s and then into the 2000's. The nice thing was, it was a flexible architecture, so you could move applications in and out of this environment relatively easily, so you could swap out a lab system, you could swap out an EMR, you could swap out a pharmacy system. Not easy to do, but certainly a lot easier to do than what we have now, which is the ... The slide's cutting it off here a little bit, but today, we have a single vendor environment.

That is, we've got registration, scheduling, EMR, lab, radiology, pharmacy, billing, all of it in one vendor. Very expensive to buy. They're certainly less fragile, no doubt about it, HL7 was very hard to maintain, very fragile. They're not easy to upgrade and they're certainly less flexible in terms of the ability to move products and best of breed in and out of these things. Again, ripping and replacing all of those modules becomes a real challenge if that's the strategy that's pursued in the course of an M&A.

McKinsey would suggest that in healthcare M&A, there isn't much of an IT strategy that's prevalent right now. Generally speaking, there isn't much of one, other than the hope of administrative savings through IT consolidation, but not so much about the details of data and applications. The strategic value of data acquisition is still largely ignored according to McKinsey.

The IT strategies that drive M&A success, again, you can achieve a 10 to 15% cost savings from a successful IT integration strategy, according to the folks at McKinsey. Some of the attributes that they suggest lead to success are the acquirer gets its own IT house in order first. That's pretty forward thinking. So before jumping into an M&A, the acquirer makes sure that their own IT assets are well organized, optimized to the degree they can be first, and then enter into an M&A. Many develop a services oriented architecture, anticipating the need to be flexible and adaptable in the new organization.

Another attribute of success for successful M&A, IT leaders are heavily involved in the due diligence prior to acquisition. I must say, in my observation, this is not the case in most healthcare M&A activities, the CIOs tend to be left out of the room until there's discussions about more infrastructure, commodities based activities, things around desktops, networks, data centers, and that sort of thing. Generally speaking, they're left out of the conversation strategically.

There is significant planning about post-merger integration of IT, both at the infrastructure, as well as the data and application layers, during due diligence. They factor those into the overall costs of the acquisition and the financial. Then, of course, as I mentioned earlier, there's a data integration plan within six months post-merger. So, some sort of plan exists, usually centered around a data warehouse of some kind, to integrate the data in the new company so that you can start managing the basic fundamental KPIs financially and clinically in the new organization.

Typically, the IT integration occurs in different levels. There's always some interest in consolidating hardware, software, data centers, storage. This is becoming less important as the public cloud commoditizes that. There's a little bit of discussion, but it's harder to integrate databases, and operating systems, and things like that because they're tightly coupled to applications. There should be, but so far not much discussion in healthcare M&A around data content. Most of the conversation is around the software application layer, but if you look at the requirements for integrating EHRs, ERP systems, that cuts across every layer in the technology stack, and that's one reason that it's so expensive. You have to go all the way down to the server and networks, data centers sometimes, and the storage level, to integrate ERP and EHR systems.

Whereas if you focus initially on the data content layer, that's the only layer that we can actually pull and peel away from the other layers, and integrate that independent of disruption in the other three. You can't peel the operating systems out, you can't peel the infrastructure out and do something different with those, but you can peel the data out and integrate that, and then start managing the organization a little differently than you would otherwise.

All right, now we have a poll question and we're going to transition the slides and discussion over to Tim.

Chris Keller: Thank you, Dale. I'd like to acknowledge as well that we have some great engagement from our audience, lots of good comments, some reaction to your thoughts, Dale, as well as some questions.

Dale Sanders: Great.

Chris Keller: We'll pass the laptop to you, so that you can look at some of those while we move on to Tim's content. Before we do that, we want to ask this poll question. Which of these three organizational resources has been the most under utilized

to drive organizational value? Option one, data. Option two, talent. Option three, technology. We'll give the audience a few moments to answer this poll question.

Dale Sanders: Is there an all of the above? Is that an option?

Chris Keller: No all of the above. All right, we'll go ahead and close that, and share our results. Tim, here's the results, 84% said data, 10% said talent, five percent, technology.

Dale Sanders: That's much higher on the data than I would have thought, even with a biased audience. That's way higher than I would have thought.

Tim Zoph: Yeah. My reaction is my friend Dale has not been less than compelling, he's actually convinced a number of people we are under utilized in data. Nice awareness, Dale, I think you really helped create that.

What I want to do with Dale's awareness and Dale's perspective on this, is to kind of come at this more from almost a balanced scorecard. I'm going to talk about data, but I'm going to talk equal parts about the role of talent and technology. I think if Dale's done anything today, and maybe all of you were enlightened as you came on the call, is that clearly this notion of data is an under valued resource. I want to talk about that a little bit and Dale, my perspective on that is not only is it important now because we have more of it and we're getting bigger, it has indispensable value for the future of healthcare. Its asset value, as well as its availability are growing, and that has a force multiplier effect in terms of your ability to move forward as an organization.

Just general context I think is, questions to ask yourself in any of these mergers and acquisitions now are really a couple things. One is, am I becoming a more intelligent and talented organization as a result of this? Secondly, do I have my cost and quality in order so I compete on experience and brand? Those are very different questions than we used to ask ourselves five years ago, but I think those are the most poignant questions now that we need to be asking in M&A.

Just on this particular slide, I want to make a point here, and Dale was talking about time periods in six months around data. One really important research fact around this is, there is a window of change and you really have a narrow window, roughly 12 to 18 months, to really realize the synergies of coming together. So, moving forward aggressively, moving forward on the things that are most important, are really critical. Why? Because the organization will settle in to a new construct and culture, and frankly, you're going to lose the ability to, or in people's hearts and minds, and it's human nature for people to want to settle back in.

You hear a lot of organizations say, "I'm going to get back to it later," they don't. Make sure that you actually prioritize what is most important and you execute

on that in a timely basis. Everything else, simply drifts and doesn't get back to it. I would argue Dale makes a strong point around data, I think data and talent is a growing asset, we want to focus on that a little bit, and technology, it's finding the balance among those. As an IT leader, those are really the levers that you have in order to make a fundamental difference.

I also make the point here that data and talent are foundational and enduring, technology's more transient. If you build your data and you build your talent, you are building a competitive and sustained advantage. The technology's going to change from time to time, but those are assets that are critically important through time.

So, finally, and Dale made both these last points, but actually as an IT leader, it's your ... You have to cut through a time honored strategy of approaching this through finance and brick and mortar, to really bring forward these new primary drivers of value. Don't expect people coming to you with enlightened approaches to this, it is your responsibility as a leader to educate, to raise the literacy, and really drive the importance of a balanced scorecard here as you go to M&A.

Next slide. Dale made many of these points around data, I would make a very strong point here about why data matters for the future of healthcare. One is simply we're going to have to be a more predictive industry, across the board. Operational efficiency, hospitals are not efficient, healthcare systems are not efficient, frankly, they've been immune to fundamental levels of improvement. Having data to really predict and react to operations and drive throughput is going to be critical. We talked about risk management, value based care, population health, we don't have the data right now to manage risk, to actually get to the next level of delivery requirement around at-risk organizations and contracting, we must do this.

Finally, care delivery is also going to be more predictive. We have a responsibility to help our caregivers really understand what's next, not what's just behind. Importantly, the predictive side of this going to come into the area of wellness and patients taking direct ownership for their care. The point is, we have a different looking health system ahead, data is a driver and fundamental enabler of that. Dale talked about scale matters, I would touch on precision medicine, spent a little bit of time with Stanford and a team out there, and what's going on. If you look at the data sets required to research and engineer precision medicine, no institution will have this on their own. As you're aligning for this, you have to align for research, you have to align to be able to research globally and act locally, becomes even more important that you manage your data because your assets now have to scale, and actually scale beyond your institution.

The final point here is one that's cultural, you've got to really shift the attitude. As I say, ask yourself, are you becoming a more intelligent organization? This is

what you're going to have to be. You're going to have to use your data, enrich it, act on it directly in the organization to be competitive going forward.

Next slide, onto talent. I saw talent got a little bit of a lower score, I'm going to really make a strong advocacy here around talent. I think this is built for IT and caregiver talent. I looked at some data before we got on the call today, Dale, looked at AAMC says we're going to be 100,000 positions short by 2030. We probably need 3,000 more residencies right now. Actually, nurses now, some 96% say they're stressed in the job. IT, as you know, there's where the growing nature of what we're going to do with data and data scientists, there just aren't enough people in the world. They say there's 20,000 people in the world that really understand data science, that's clearly not enough. Part of what you have to ask yourself in the M&A around this is take responsibility for both training and developing the next generation. I would tell you that M&As are a pivotal time for which people make choices. A pivotal time. When you pulse an organization and come together, and align, that's a stay or go decision for people. Frankly, the ones that are most valuable may be the ones that you leave.

So, your positions will be making those choices, your talented IT people will be making those choices, make sure you're building the environment that will create and retain the best. Increasingly, people want to be in environments that are innovative, that they can learn and grow professionally, and they feel as if they're being pulled forward by something greater than their role. This is a time to talent up, it's a time to pay attention to the talent you have, but importantly, build that professional environment to scale, that allows you to recruit and retain, and importantly on the caregiver side, really gives caregivers the tools they want. They want to be more predictive, they want to return to the practice of medicine, they want to spend more time caring for patients. Being a more intelligent, proactive organization that has data at the foundation gives you a competitive advantage for retaining that talent.

Next slide.

Dale Sanders: Hey Tim, can I ask for your opinion on the talent thing, friend? Do you see any overt strategies for healthcare M&A driven by the desire to acquire talent? I'm reflecting on the M&As that I've seen and I'm not sure that I've seen that as an over strategy, but I could be missing something.

Tim Zoph: It's really kind of we're living with legacy M&A methodology and approaches, which really starts with finance and financial due diligence, and you kind of move ahead and then you figure it out. I think there are organizations that are really doing this a lot better, but that's where we are. I just don't think the talent scorecard ... We deal with culture, but really assessing your talent upfront is important. I think our ability to serve patients, given the scarcity of caregivers and physicians, I think really paying attention that and say, "Do we have the right environment for them? What can we do? What can technology do to really improve on that environment, reduce the stress and fatigue, and give leverage

to a recruitment and retention strategy that will really cause people to stay or go?" If we don't have enough IT talent and caregiver talent, and you're about to become bigger, I think you have to now pay more acute attention to these assets, because the reality is, you're not going to go to the marketplace and find them, and you're going to probably have to grow and develop your own. That's why the environment really matters, Dale, and being more innovative really matters. This is a sustainable competitive advantage, he who has the best data and talent wins, long term, in my view. So, the talent piece gets not enough attention.

Dale Sanders: Thank you.

Tim Zoph: Terrific. I just want to return, Dale, this is my last slide in this section, just to balance out this notion of technology. We talked a lot about data, hopefully data and talent now you understand, but there is something important about technology. Dale, there's one thing that I've observed, often times in these big M&As, often times what happens is, you roll from one, you roll to the next, you roll to the next, and you haven't really had a chance to assimilate the organization well. Often times, the lack of standardization and simplification of the technology portfolio leads to organizations that are more costly and more complex. You have a lot of risk in doing this, you can make things worse. Security is one of those areas, data integration's one of those areas, so really pay attention to where you need to simplify and standardize.

Again, this isn't an advocacy for saying you've got to rip and replace the EHR, sometimes this is feeder systems, people running six lab systems and so on and so forth. Often times you have some technology inside for which you can make fairly straightforward decisions, but massively reduce the complexity and simplification. Take responsibility for the portfolio and really ask yourself how risky this is, and be aggressive in doing it. A lot of organizations now, they're getting so large they own one of everything, so it's very, very challenging. This notion of being disciplined about the elements here that you face of risk, cost, and security, I think are really important that you have that in front of you.

I do think that this is an opportunity to get big data and technology, the cloud. This is a run, don't walk recommendation here. Any time you have a moment of change, you have a moment of acceleration, those two things go together. I really recommend that you strongly look, like other industries do when they consolidate, is either get there before the consolidation, Dale to your point of preparation, or use this an opportunity to accelerate your strategy, but this has to be top of mind in terms of where's the best place to operate and organize my data going forward. Because there's a lot of value and a lot of future value in doing that.

The last is to make solid business decisions. I think back to, the tendency here is, and I see this as the first question you ask is, what's your electronic record, and you say, "Which way are we going?" I think that's been driven by an incentive driven mindset from the federal government in spending 35 billion on this, is

that simply because we've been doing this for so long, we think it's the next right thing to do. Just to understand, we've got to break the mold here. We kind of have muscle memory around how to do this, we've gotten very good at doing it, now we have to do something different. So this is going to be hard. I recognize that even if we're making a compelling argument today, it's really going to be hard to change the muscle memory of our organizations because we've been doing this for so long. So, make solid business decisions, make sure there's ROI on it, and back to this, you only have capacity to do so much, make sure you're really doing the right thing.

Dale, I'm going to turn it back to you.

Dale Sanders: Okay, friend. I was wondering where you were headed with that last bullet about pivoting from the incentive driven technology mindset, I think that's really interesting insight that your premise is, there's some momentum driven from the high tech act that just kind of leads people to the forgone conclusion that rip and replace is the thing to do. That's interesting. Any other thoughts on that?

Tim Zoph: I think it's confirmation bias.

Dale Sanders: Yeah.

Tim Zoph: I think it's just one of those things. It's always been the biggest thing and most important thing to do, for the last five years, so maybe people assume it's the biggest and most important thing to do for the next five years. Frankly, we've built a lot of talent around this, right?

Dale Sanders: Yeah.

Tim Zoph: We're actually really good at it. The point is, we've been really good at that, now we need to be really good at something else.

Dale Sanders: Yeah, man, [crosstalk 00:38:11]-

Tim Zoph: I'm just acknowledging that this is going to be hard to do and that when you're really good at something, and you have sort of a confirmation bias around it, the thing is, you have the greatest appetite to lean in that direction.

Dale Sanders: Yeah.

Tim Zoph: We can't lean in on this anymore, we have to lean in on something else, and I'm just acknowledging that's hard to do.

Dale Sanders: Yeah. Very interesting, friend. Let me service an interim thought that popped into my head. One of the motives that I see in choosing a rip and replace strategy is physicians who want a better EHR and a common EHR. Those are two different threads. A better EHR, more user friendly EHR, is one motive. A

common EHR, so they don't have to learn another, is another motive. But I see physicians and physician opinion playing a pretty important role in the decision to go down an EHR rip and replace strategy. Do you see the same thing and do you think those are ... Are those valid? How far do you go to address the concerns of the physicians, knowing that it may cost you tens, if not hundreds of millions of dollars to do so?

Tim Zoph: Yeah, Dale, my view is I think that's a really good point, but I don't think we've talked about what else might I do if I didn't do this.

Dale Sanders: Yeah.

Tim Zoph: There's a lot of improvements you could make in current systems, you could build your data warehouses, you could advance the knowledge of your organization. There's lots of things that you could do with that money time. So, actually presenting to physicians not just a, "Either we're going to do this or not," which is sort of a null hypothesis, it's really, "Let's really stand back and say, 'What is the scorecard of things that are most important to do and where would we drive the most value?' And what would be most important to the care and treatment of our patients?" You may come to that conclusion, but often times, people look at it as a null hypothesis, either I'm going to do everything or nothing.

The reality is that, given the cost of this and the time that you have to put in, there's a lot of value in alternative strategies that I would argue would have equal or more positioning. Competitive positioning, intelligent positioning, all those things that build the future of healthcare, that you could do and by the way, if you do that EHR, you're not going to get back to it for another three years. So, part of it is, is what does it cost you in time, what does it cost you in money, what are you not getting as a result of doing it? We have to really have a fulsome balanced scorecard conversation with the organization and it gets back to where McKinsey was, let's really understand and recognize that technology is an enabler of value, but that value has to be discovered by the organization collectively with its leadership team, and really aggressively looking at the alternatives of how we spend our resources and time.

Dale Sanders: Yeah. Fascinating. Thanks, friend. Shall we look at some of the questions that are coming in?

Chris Keller: We have some great questions. You probably have 15 people here who have contributed about 25 questions.

Dale Sanders: Nice. Interesting.

Chris Keller: Perhaps what we could do quickly is move over to a couple quick poll questions, and then we'll jump to the questions.

Dale Sanders: Okay.

Chris Keller: Okay, moving forward, I do want to let everyone know about the Healthcare Analytics Summit this fall, September 11th through the 13th. We have an incredible lineup of speakers here. We've done this many years in a row and we're excited to give a couple giveaways. If you are in that category of someone who knows they can come September 11th through the 13th, and you'd be interested in putting your name in the hat for a giveaway, we have a team of three registration that we're going to give away. Go ahead and answer this poll if you'd like to be put into this giveaway for a team of three registration. Okay, move quick on your poll, we're going to close this in just a moment. This is your last chance, team of three, and then we'll move on to a single registration. Okay, very good.

Now, a single registration. If you know you can attend September 11th through the 13th and you'd like to get a free registration, please answer this poll. Okay, lots of activity there, thank you. We'll close that in just one moment.

All right.

Dale Sanders: Can our attendees see the results? Did we show those results?

Chris Keller: We can show the results, it just takes up time.

Dale Sanders: Yeah. No worries. About three-fourths of people responded that they wanted to be included, that's interesting.

Chris Keller: That is exciting.

We also want to let you know about the next webinar in our series, May 9th, we have Dr. [Halamka 00:43:22] and Eric Just talking about precision medicine. Tim, you talked about the importance of data sets for precision medicine, we're excited about this one. Then finally, we're going to ask one question. Oh, it looks like we missed it in this. If you would like-

Dale Sanders: I took it out, it was to see if anyone wanted a Health Catalyst demo.

Chris Keller: It looks like it-

Dale Sanders: I took that slide out.

Chris Keller: [crosstalk 00:43:45]

Dale Sanders: I did because-

Chris Keller: [crosstalk 00:43:46] Would like it? We know this is an educational webinar, but if you would like someone from Health Catalyst to follow up with you to provide

a personal demonstration of solutions and services, please answer this poll, and then we'll move right over to questions. All right, Dale-

Tim Zoph: Maybe we should have a poll question to see, Dale, if anyone wants a personalized demo from you and I together. [crosstalk 00:44:09] That helps. See if that helps or hurts [crosstalk 00:44:12]-

Dale Sanders: I'm sure it would probably hurt.

Chris Keller: We have some good ones here.

Dale Sanders: Okay. Why are you starting with that one, friend? Are we not up here at the top?

Chris Keller: We can go to the very top, we've highlighted these ones that we think are most [crosstalk 00:44:28]-

Dale Sanders: Oh, I see. I see. Okay. All right.

Chris Keller: You're welcome to click around.

Dale Sanders: Let's see here. From Matthew [Weeks 00:44:35], "We see the baby steps as immediate next steps in making data accessible, not even big data for analytics and insights, simply making the basic core functions of data access available across an organization with little hassles to those needing it, and eliminating friction, multiple logins, structured data from the systems coming in as unstructured, and thus non-usable. What do you think we can do, next baby steps, from a prioritization?"

Oh my goodness. Well, Tim, let's take turns on first respond here, friends, I'll go first on this one. A lot of this, Matthew, has to do with the culture of the organization, frankly. When Tim and I worked together, our goal was to put a custom data set on everyone's desktop, who could benefit from that. To try to take IT and all the friction associated with getting access to the data that people needed, be it researchers, clinicians, administrators, make that as seamless as possible. There's plenty of technology to do that, it's easy to do, but what I see a lot of times is too much fear around data governance, and sometimes privacy and security. While all of those are important, I believe the democratization of data is more important at this time in our history than it's ever been. If we put up artificial fears and barriers, that have no real basis in true risk management, around security, privacy, data governance, then I think we're holding back being a data driven industry. The technology exists, Matthew, I would say it's largely a cultural issue and it has to be driven from the C-level down. Tim, any thoughts about that from you, friend?

Tim Zoph: No. Just one observation, I think we've got to work on the disciplines right away. We've got to work on the standardization, the quality, and the liquidity of the

data, which I think you're arguing for and I certainly would. I think in parallel, I don't undervalue the importance of having access to basic information at the edge of the organization for multidisciplinary teams to do improvement. We know that's the future of change, is we've got to really increase the denominator of people that not only have access to the data, but have fidelity and facility in terms of using that data.

I think empowering your organization with basic data that captures the message of continuous improvement, that allows people to come together around day to day problems, is a culture you want to work in. I think actually declaring that, announcing that as you come together, if you haven't done that, and as you get bigger you have more opportunity to do it. In terms of immediate things, Dale, maybe you can't deliver all those things immediately out of the box, but declaring where you're headed and declaring that you really want to democratize and really empower people with use of data, I think is a real important cultural statement to make.

Dale Sanders: Yes. I totally agree, friend. What I see in the trenches of this day in and day out is I see executives buying in to the cultural adoption of data, but frankly, what I see is lower levels of the organization, in IT quite often, sometimes directors, sometimes VPs, who put a protective fence around their data. They treat it with more exclusivity than the C-levels I think realize. So, the culture has to be pushed all the way down into the organization, it has to permeate things, it can't stop at the executive level.

Okay, another question here-

Tim Zoph: Yeah, Dale, sometimes you just ... One more response on that, Dale, is sometimes you have to take and create a center of excellence so you bring people together and kind of move it out of its silos, and get people to aspire to something greater. If you can't be innovative in your silos, create structures that will allow you to do that.

Dale Sanders: Yeah. Good point, friend.

Okay, another question here from Mitchell [Wiener 00:48:52]. Mitchell asks, "Any organizations utilizing an enterprise service bus as middleware to integrate the different EHR systems rather than replacing?"

Tim, do you want to take first response at this?

Tim Zoph: Well, the best plan I've seen is somebody we worked with at [Centerra 00:49:12] and Mike [Regan's 00:49:12] work, really looking at enterprise service bus and recognizing especially that he had to design that and execute that because of his need to deliver on the patient experience. I think you're seeing the advent of this as we're increasingly solving more challenging issues. I've

seen that certainly on the patient experience strategy, and I give you Centerra as an example.

Dale Sanders: Yeah, that's a good point. I don't see it happen very often, but I do see it in some of the larger, more sophisticated systems. HCA is one of those systems, I would suggest, they're building out and they have their own enterprise service bus, and that's essentially what they use to integrate their disparate EHRs. I would say it's a more advanced solution, more forward thinking solution, than an HIE, for example, but it's also a little more complicated to implement and maintain, so it requires different skills.

Let's see here. Let me go on, let's see. Rob [Thulumeyer 00:50:27] asks, "Why not put wrappers around the EHR to do clinical documentation? Something they are universally bad at."

Well, I think that's becoming more possible, with Fire and open APIs, we're starting to see what I would call re-skinning of EHRs so that the user interface to the EHR can be more custom and a little more friendly than traditionally I think most people would say has been the case. It's happening. Tim, do you have any thoughts? It's not widespread yet, but it is happening.

Tim Zoph: I think that's right. You see EHRs that allow you to do the wrapper inside of the EHR itself, I think it would kind of be the end pages that they're inside of [crosstalk 00:51:12].

Dale Sanders: Yeah.

Tim Zoph: I think API is going to enable it. Frankly, the other enabler is it just takes too much time and is burning out positions. So, I'm hoping there is more innovation around this so that we actually have systems that work better for our caregivers.

Dale Sanders: Yeah. Okay, Jerome [Brower 00:51:38] asks a question here, "Great presentation, I think the presentation focuses very much on large health system and hospital M&A," probably some truth to that, "What about acquisition of smaller players, say acquisition of a local 10 physician pediatric group?"

Well, that's where I believe the rip and replace strategy is actually most prevalent. It dominates a lot of M&A strategy in large systems, but I would say it's pretty much a forgone conclusion if a hospital or a large physician group acquires a smaller one, there's almost always an assumption that they're going to push that smaller physician group onto a dominant EHR. Tim, do you have any other thoughts or contrary observations to that?

Tim Zoph: No, I think that's right. If you ask what you're trying to solve to, there can be some friction if you're on disparate EHRs, in terms of how information flows in the organization. Some of the real key questions you're asking, and those

practices are asking is, where's my quality, where's my costs, how do I actually make sure that this health systems or this smaller clinic can be part of my delivery system? Can I go at risk with them? Can I really measure the experience of my patients there?

I would argue that you have to ask yourself why you're doing this and what is most important to know. So, again, organizations that are operating perfectly fine from a performance standpoint and have technology in place, you really have to step back and say, "What's the most important thing to do?" Actually organizing around the data may actually get you closer to the end stage objectives of what you really intend to do as you acquire this practice.

Dale Sanders: Yeah.

Tim Zoph: Besides, it's really disruptive to the physicians [crosstalk 00:53:38]-

Dale Sanders: Really disruptive. Yeah.

Tim Zoph: ... perfectly well, is that what you want to do is go in and pulse their model unduly? Unless they're really asking for it or unless you've really got something that isn't working well, I would ask yourself, "Is it worth it? Is it worth the change? What can I do less intrusively to actually add value in a shorter period of time?"

Dale Sanders: Yeah, I totally agree, friend. It's so disruptive. My argument is that there are gradients of usability among EHRs, there's no doubt about it. I think generally speaking Epic is regarded as more user friendly than Cerner, for example, but it's not orders of magnitude more user friendly. Same could be said about any of the EHRs. I think, in general, none of the EHRs are going to win many awards right now for usability, but the gradient of best to worst is just not that significant. When you talk about the disruption culturally and the cost to implement a new EHR, I just don't see the value. I just don't see the value.

By the way, I don't blame the EHR vendors for their usability issues entirely on them. The reality is, the federal oversight, the regulatory oversight, the compulsory measures that are forced now on the industry, drive a lot of the usability woes that we're seeing now. Hopefully, we're starting to see some progress around simplifying those compulsory measures and credit goes to CEMA and CMS for making some of those initial gestures.

Okay, here's a question for you, Tim, back to talent here, friend. This is from Sonny, "What is the relationship of developing versus acquiring talent?"

Tim Zoph: Yeah. Here's my posit on this, and we've kind of worked on some talent development [inaudible 00:55:38], but what I would say is, you've got to have a development strategy now that is equal to or really more robust than your acquiring strategy. Which is really identify those areas where you need to grow

the technical skills or you need to have people gain the experience, because a combination of experience and technical talent, experience in your organization and technical talent, are really going to be highly valued.

What I would say on the acquisition side is really understand where those real important assets are that fill the gaps or actually add to really important components. Just like you're looking at the portfolio of technology, look at the portfolio of talent, and let people know that they're joining an organization for which they will have the opportunity to learn and grow. That's one of the most important things you can communicate to people during an M&A time, while they're thinking of making the fundamental stay or go decision. Let them know that they'll be part of an environment that they can learn and grow, that their talents will continue to be realized, and that you're an innovative organization. People want to be a part of something that is bigger and greater than what they are leaving. Dale, those are sort of my responses there.

Dale Sanders: Yeah. Great points, friend. There's a related question about, "Is the IT talent," this is from Scott McCartney, "Is the IT talent scarcity coming ... More generally, is it about IT talent or is it about analytical talent?"

I would say that it's definitely about analytical talent and I would say that the next wave of shortage is going to be application development talent. The IT talent shortage that we've all suffered, to some degree over the years, is being assisted by the public cloud. In the public cloud environment, I don't necessarily have to maintain a significant data center infrastructure talent group anymore. We still need talents in that space, but there is a different kind of talent, and they can move up the stack of value. We are definitely seeing a scarcity of analytic talent in the market. That will continue and we have to start building those skills out. As soon as we catch our breath on building out the analytical skills, I would suggest that most organizations need to start developing a strategy for application development that helps differentiate their organization from their competitors. What do you think about that, Tim?

Tim Zoph: I think you're right. My hypothesis is that healthcare is heading in the direction of other service industries, for which data and the consumer experience are going to be more important. Good news is we can learn from them, the bad news is they've put a lot of talent in place that may not be likely to move. We're going to be now increasingly competing with other industries for top talent. I think we can play on hearts and minds here because healthcare has got a fabulous mission that's unlike any other organization they ever worked for, but just be prepared that the talent competition now is not necessarily the health system down the road. The competition for talent, especially in markets now that are well along like New York and San Francisco, you're competing across the board for an increasingly competitive set of skills.

Dale Sanders: Yeah. No doubt about it, friend. I think it's hard for healthcare to accept that, especially executives, but all industries, all businesses now differentiate themselves through data and software, that's just the reality of it. In the past,

we could differentiate ourselves if we had a homegrown EHR like Intermountain and Partners, and Vanderbilt did, Columbia. High tech now has essentially commoditized the EHR, it's not longer a differentiator. If you want to differentiate yourself, you've got to have custom application development capabilities in your organization.

Tim Zoph: Right. So, Dale, back to this point, I think with electronic health records it is really good to learn from one another and where there is best practice adopted. If you're going in the world of patient experience, patient and consumer experience, the goal is to be distinctive and competitive. The only way to do that is to have talent on board that really understands that experience better than others, and actually has a way to use software as a part of the branding experience, to create something that's unique and distinctive. Our competitive edge now going forward to be, "Gee, how do I look different, not the same as somebody down the block?"

Dale Sanders: Yeah. Exactly, friend. Darn, we're about to run out of time and there are way more questions, great questions here, that we haven't had a chance to address. I apologize for that, friends. I could actually stay over. Tim, I won't obligate you to that. I can go over-

Tim Zoph: I can still around if you're sticking around, Dale.

Dale Sanders: Okay. Great, friend. Let's stick around for a few more minutes. These are really good questions. This is another talent one I'm going to toss your way here first, friend. From Mitchell Wiener, "Is it your observation that the executive level does not reach out to the technical talent early enough in the M&A process to get options other than rip and replace?" What's your observation there, Tim?

Tim Zoph: I'm just trying to make sure I understand the question, doesn't reach out to the talent ... Oh, you mean you've lost the talent for other alternatives, and then you end up with simply having to do the default alternative, which is the rip and replace?

Dale Sanders: I think that's it.

Tim Zoph: [crosstalk 01:01:27]

Dale Sanders: Yeah. Here's what I'm surmising is that the CFO, the CEO, the COO get together and they establish some momentum behind a rip and replace, but they don't reach out to the IT talent in the organization to explore other options.

Tim Zoph: Yeah. Part of that, too, is if that's the out of the box decision and that gets signaled in the organization, and as we talked about, that's just a huge sucking sound for the funds and for the resources within IT for a three year period. If you've got folks that you've had working on innovative projects, their concern will be, "Well, what's going to happen to me," or, "What's going to happen to

my project," or, "What happens to my environment?" So, I do think you have to really signal the talent issues early because those are often times made and being thought of, the day you announce you're coming together. The more you can signal around your environment that you're creating, innovation that you're creating, your respect and value for people that have the talents that are going to be so important to you going forward, it's an opportunity to retain and maybe attract, but it's also recognizing that there are more and more alternatives for people with that skill set to go down the road if you don't really signal that you're going to value them either project-wise or environment-wise.

Dale Sanders: Yeah. I agree, friend. I agree on all points.

Here's a good question, interesting one, from Samuel [Assissi 01:03:05], "Does one need to come up with a monetary value of the acquired data in M&As?" Let me repeat that, "Does one need to come up with a monetary value of the acquired data in M&As? If so, how is this done? Via third party since there might be disagreements about the value of such an intangible?"

I can say, Samuel, that I have never seen, first or second or third hand, any healthcare system, acquirer or acquiree, attributing the value of their data in the context of the M&A activity. I have seen vendors do that, one vendor acquiring another, looking at the value of the data they hold, that acquiree's data, but I haven't seen a healthcare system do that. I would argue that they should be. Absolutely, positively they should be.

Just for fun, by the way, when IBM acquired Truven, I estimated what IBM paid on a per record basis for the Truven data set. It was pretty high. I won't reveal that, I would encourage all of you to go out and do the back of the envelope calculation that I did, but my opinion is, IBM paid a pretty good sum on a per record basis for the Truven data content. But, I'm not seeing any evidence of that happening from a healthcare provider perspective. Tim, are you seeing any evidence to that?

Tim Zoph: No, and I love the question, thanks. By the way, the questions have all been great today, so thank you for those, they're great and challenging, and I hope we've been responsive. I would just say if I look outside the industry, Dale, we know it's being done. You see large acquiring or joint venture organizations like SoftBank, for example, that you know they're acquiring companies purely for the data asset value. I think there's an opportunity here, really, to discover how others do this well and value companies when it's a pure data play, and maybe healthcare can learn from that. I love the question, I just haven't seen it done.

Dale Sanders: Yeah, likewise. I think we should be learning from that. Again, my opinion is, we should be shifting the strategy of an M&A from bricks and mortar to talent and data. Talent and data, not bricks and mortar, because it's not bricks and mortar that's the future of healthcare.

Tim Zoph: Agreed.

Dale Sanders: Here's a question here from Rochelle [Lamay 01:05:31], "How do you change the muscle memory? What suggestions do you have to demonstrate the ROI?"

I think Rochelle, what you're referring to here is the muscle memory associated with the deployment of EHRs that Tim mentioned, I think that's the ... "What suggestion do you have [crosstalk 01:05:55]-"

Tim Zoph: Yeah, Dale, I used that term, Dale.

Dale Sanders: Yeah.

Tim Zoph: Yeah. Go ahead, Dale, what do you think?

Dale Sanders: No, no, you go ahead.

Tim Zoph: I think it's an education, it's a literacy thing, I don't think you can start too soon. I think maybe using examples outside of industry. This is the challenge of being an IT leader in this age, when we're fundamentally in a transformational period in healthcare. We are fundamentally in a transformational period in the tools, and technology, and talent that got us here is great, but it's not going to get us to where we need to go. I think in any period of fundamental transition it's a higher responsibility for a technology leader to bring their leadership team along. I would just say whatever you can do to educate, to inform, to provide other best practice ideas, before the time arrives. I'm acknowledging here on the call just how hard it is when we built this muscle memory around what it is we've done over the last five years, and I'm not saying it hasn't been important, it got good infrastructure into healthcare, but assuming that people are prepared to do something fundamentally different than they're natively used to doing, is a fundamental change management problem. I think ultimately it's going to be a leadership issue, get people to seminars, have them hear people talk about it, have them talk to leading organizations now that are valuing data and using it strategically. It's going to take almost a campaign inside your own organization to really shift the mindset and get people prepared for how to act differently.

Dale Sanders: Yeah, I agree, friend. Going back to the muscle metaphor, what I see is also some muscle fatigue in that everyone put a lot of time and effort, and money, into EHR adoption. The notion of continuing to become digitized is a little bit exhausting, I think, to most organizations. I think there's a little bit of fatigue from EHR adoption in the industry right now, and everyone's saying, "Oh my gosh, we can't do one more thing that's even remotely complicated." I would argue that, that's ... When the going gets tough, the tough get going, and now is not the time to take a breath, now is the time to take the next step. We owe it to the country and our patients to do that.

Tim Zoph: Agreed. I think there is fatigue, a little bit of IT spend fatigue. We work with organizations around the country and the strategies have been very compelling, but it's just like, "Oh my God." It's two things, it's either, "Can I get a breath? Can I spend my money elsewhere? Because I've had other things stack up while I wasn't doing this," back to your earlier point. Or you get sometimes a response of, "I thought I bought this already," because the investment's so significant, you just assume you have everything you need for the next five years. I think the combination of the fatigue and then not fully understanding that you have other strategic pieces now that you're going to need to assemble to be the healthcare of the future, organizations just aren't really prepared. They're kind of taking a breath at the same time you want them to start standing up and running another race.

Dale Sanders: Yeah. Well, let's see, let's take one more question and we'll call it end of the webinar at 10 past the hour. This is from Kimberly [Laforde 01:09:22], Kimberly asks, "Do you think it may be easier for organizations that have already moved to value based care to adopt this mindset of data integration, versus those that are still fee for service?" Tim, you go first on that one, friend.

Tim Zoph: The answer is yes.

Dale Sanders: Yeah.

Tim Zoph: Any time you've had an opportunity to take a bite of the apple where data's been a fundamental driver of value, the next bite of the apple's a whole lot easier.

Dale Sanders: That's a great way to describe it. I agree. I also think, in addition to being already more naturally data driven if you're in the value based world, you're also more concerned about costs and margins and expenses, than if you're in a volume based fee for service environment. I think you'll stare down the costs of implementing an EHR with greater scrutiny than if you were still just living purely in the fee for service world.

All right, I think we better end the webinar, friends. I could go on forever, this is fascinating. I really, Tim, can't tell you how much I appreciate the dialogue, and the friendship, and your wisdom, as usual, thank you, friend.