RRSP03

Reimagining MedTech, where devices meet digital platforms with Predrag Angelovski, CTO at Healthcare Informatics, Philips

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(00:00.78) We haven't got Rob on the conversation today, unfortunately. That means we're gonna be short of a pre-title sequence of him cackling madly. (00:21.422)

I'm Dave Chapman. I'm Esmee van de Giessen. And this is Realities Remixed, an original podcast from Cap Gemini. And this week it is part three of our Life Sciences mini-series. And this week we are going to talk about med tech and health workflow in hospitals and the like. Now, I'm delighted to say that joining Ez and I today is our co-host for the Life Sciences miniseries. It's Thorsten Rall, Life Sciences leader at Cap Gemini. Thorsten, you good? I'm doing just fine. I'm always so much looking forward to these episodes. So couldn't be better. It is always a pleasure to see you on a Friday afternoon, Thorsten. Always. And Ez is here, everyone. Ez, how are you doing? Yes. I'm I'm doing good. I'm actually I I'm excited to step into this mini series. you did the first two episodes obviously, so this is the first one and yeah, it's a fascinating topic and industry. So yeah. It is indeed. Th there are so many things that go on in life sciences, I think, that are common in other industries. However, when you put them all together around the patient or around the human, it gives it a very, very different complexion indeed, doesn't it, Thorsten? Yeah, definitely. And I think at the moment, with with all the technology changes you see, right? I mean we're really at the cusp of seeing I would say A very rapid transformation of of life sciences and healthcare. So super excited to have this this mini series here and hear from senior executives from the industry on how they see things evolving. Gonna be good, gonna be good. Now, you will notice that Roberto is not with us today. Now he the reason he couldn't make it is because he's traveling at the moment. And if you listen to the show, you'll know that Rob makes it a bit of a habit to get lost in tra in train stations. So Ez, guess what happened this morning to Rob? Well, well and w don't forget to mention that he's always anxious and that he still prints his, you know, tickets, etcetera. Although I do believe that he stepped into the digital world on that side. But well, the question would be, did he find his way? No, he got lost in a train station in Oslo today. Like and it's not even a joke it's not even a joke. No. It's not even a joke. It's like literally got lost in a in a circular in a circular train station. (02:38.398) Anyway, God love him. I hope he's made it home safely. d if can you just see him walking around there with his backpack and he almost feels sorry like Yeah. It's like, somebody save him. He does he does have that kind of forlorn demeanour when things aren't going very well. Love having your back rub. That's too bad.

Anyway, look, on that note, Thorsten and remind us about what we're inquiring on in the life sciences miniseries. Yes, as I alluded before, right? I mean, there's so much happening in life science at the moment, partially driven by regulatory changes, but of course to a large degree also by technology changes. So what we are exploring in the series is really how the industry is evolving along a different couple of different dimensions, right? Starting from how is discovery and and drug research really changing? How we actually see manufacturing supply become more adaptive, more resilient? and also how do you actually See engagement with patients and with healthcare professionals evolve in the next couple of years. And not to forget, we talk a lot about pharma, but we also talk about medical devices. One one segment that maybe a little bit less come to mind first when people think about about life sciences. But they are really looking into how the product and platforms that medical device companies are are bringing to market are changing and are also shaping the way. Both healthcare professionals can do their work much better and much more effectively, but also how the experience of the of the patients is getting improved by doing that. And that's also the topic that we'll be digging into today with a very, very esteemed guest that I look forward to so much to talking with. Now joining us today is Predrag Angelovski. He is the CTO of healthcare informatics at Philips. And Predrag is gonna take us through healthcare platforming. The state of the art at the moment, where the industry is up to, the difference it makes for patients and practitioners. So let's go to our conversation with Predrag. (04:47.998) Mm-hmm. (04:54.146) We, I think, had our first conversation way back in reinvent last year. How's your year been since then? It sounds like an

eternity ago, given how fast the industry is going and given how fast things are changing on a day-to-day base. I gotta say it's been a very exciting year. A lot of great development, not just in healthcare but in technology, so I've been keeping busy. Well, let's maybe come back to some of that stuff. it's really good to see you. Whereabouts in the world are you talking to us today? So currently I'm based out of the US, our Cambridge office. I'm running the I'm the CTO of the healthcare informatics business at Phillips. Well, yes, tell us a little bit about that. What what does that what does that involve on a day to day basis? So generally, and I think this is an interesting shift in where healthcare really is going as an industry. healthcare has originally started in a very departmental solution. So best of breed, focusing on the best for radiology, best for digital pathology, best for cardiology. And then it all started with EMR starting to really consolidate this under one ecosystem and under one platform. So in healthcare informatics, our main focus is of course around imaging, given Philips as a company and our background in modalities as well as software. And What we are working on, when I'm specifically working on right now, and I'm very excited about, is really our integrated diagnostics play. It's how do we bring back some of our solutions which are already best of breed out there with and top, you know, at the top of the market and bundle them in in a platform that is not just a well integrated solution, but that integrates natively on that platform layer. So if you think about it, you need to think we need to look at it as a platform based A solution that has an integrated data layer, an integrated security layer, and in these days an integrated genetic MCP layer that then provides verticalized solutions on top of it. So if you take, for example, you could see the VNA as a backbone of data. And then you have your integrated workflow engine on top of that that drives your radiology, pathology, digital pathology, advanced visualization, cardiology workflows. And (07:07.81) Bringing that all together into one seamless user user experience on top of that, where whether it's clinicians, whether it's radiologists, whether it's pathologists, have both cross-modality workflows, but as well access to all data that allows them to make complete clinical decisions and supports effectiveness in their work, in their day-to-day work. So mainly we are really I'm really focusing on defining what that platform and what that future looks like for Philips. And working together with our teams to make it a reality. The platform you described, so for those who aren't familiar with life sciences, particularly as a sector, the way you describe that, it looked, it sounded like it was targeted at things like hospitals and things like that. Is that the is that the target customer for that platform? Absolutely. So our target customer is usually clinical environments, hospitals, clinics, labs, mostly in the healthcare sector. So You can look at it in l like large clinical academic centers, or you can look at it in more of satellites, clinical centers where you have, you know, dedicated specialities and dedicated modalities. And the main challenge of this is how do you bring all of this back into one harmonised platform? I see. Presumably a cloud delivered SaaS like platform that what integrates into the rest of the stack that whatever that facility has. this would potent potentially integrate across different things into that one platform or is it like own standalone? So the platform itself is of course cloud cloud first, cloud native, because you know, we need that the power of the of the cloud behind all of the work that we're trying to do. But the main point of the platform is that it does integrate with the systems wherever they are. So if they are on premise systems with hospitals, whether they are modalities, whether there are other laboratory information systems, recess EMRs, or whether there are other cloud providers, the whole point of the cloud of the platform is that it's interoperable and that it provides many entry points into the ecosystem of integrated diagnostics. I wonder if we could maybe just frame understanding the platform and its capability from either a patient's perspective. (09:30.016) or a physician's perspective. So what does having that end-to-end multimodal process all in one place? Like what difference does it make to patient care? Absolutely. I think that is the right way to to look at this issue. So let's take an example of a patient that is entering a clinic that has had previously, let's say, an exam, let's take an oncology cancer patient as an example. So if if you

look at an experience a patient has today in an oncology case on a system that let's say it's not platform based. It's usually very a lot of dispersed exams where you you up you really first start with your general physicians, then you go to an oncologist, then they make a preliminary diagnostic, then you go to a lot of imaging and screenings. But each of these experiences is individual and every time we are usually faced with the same things, you're asked the same questions, you have the same questions, but you do not get the answers because the data that the clinicians or the the department has at the moment is limited to the task that they're performing. So if you look at it from both sides, one as a patient, you're going through a very stressful, very personal situation and you're frustrated at any at every point of time, you ha you have to go through the same process all over again, explaining your background, explaining your case, explaining why you're there, answering the same questions, while at par in parallel, you do not get the answers that you're looking for, because if you're going and having your you know an MRI done. Then they are the only thing that the clinic at that moment knows is what what what MRI they're doing. So if you have questions about how is this related to the test I've previously done or how is this related to my previous findings, you usually do not get any of those answers. In parallel, the clin, if you look at it from a physician perspective, it's very difficult for them to dip into your previous case to see, let's say you're a pathologist and let's say you're about to take a sample. You don't have access to the previous imaging. Or if you do, it's a very static way of, you know, a f something attached to a patient file. So if you're trying to figure out what is the best approach to take this sample, like should you be looking at something else? Should be looking taking multiple biopsy samples instead of one. Today in this, you know, dispersed systems, you are very limited in in what you know and what you have. If you look at this from a platform perspective, and I think the pathologist use case is a very prime one. Let's say you have a patient that is coming for a biopsy. (11:51.574) And you know it's on the thyroid or you know it's somewhere there, but you wanna know more information. Is it on the surface? How big it is, what is the angle? is there multiple places? In a platform approach, you can just literally pull that data out of the PAX imaging system, put it right next to your pathology report that you're preparing, and you can look live as you're preparing what your procedure. And after you take the samples, after when you're analyzing, you don't have to revert back to notes, you don't have to revert back to static images. You can pull the pathology example, you can pull the radiology samples, you can pull data from the EMR and have a holistic view over the patient as you're preparing the full story. This gives the clinicians a better experience. I believe in the UK, must be going on fifteen years or so ago now there was a very major Piece of IT development in the National Health Service here in the UK, which is quite controversial for a load of different reasons that I won't go into now. But one of the things it was trying to do, by the sounds of it, was very much like what you guys are doing in terms of bringing all of the information together and making it very accessible. The the NHS attempt was very difficult at the time because it was pre-cloud. Information was dispersed across multiple like general practice physicians' places, hospitals. in different places. And the idea was if I live in London, I can go into a hospital in Glasgow and they will have the same information on me. It it seems really basic now, but at the time it was a very big and challenging problem. I wonder where I'm going with this is w what percentage of countries and and hospitals have now got the sort of technology you describe? Like is this now like it it's got a it's a typical thing. It's like a full install base. And a hundred percent of places have got it, or is it still relatively cutting edge, the sort of platform you describe? So I would like to take a moment to just make a difference between a platform and an integrated system, because I think fundamentally that is that also explains a part of your question, which is why the NHS and why we've struggled with that before in the past. Yeah, great. Because if you look at an integrated system, it is a sum of all its pieces. (14:08.938) It is complex. It is every piece is a piece on its own, meaning it's either you get updates by itself, changes by changes on their own. And then the the the integration points are usually very fragile and very limited. So when

you create this network, this web of integrated systems, you have many failure points. Data is not standardized, data formats are not standardized, protocols are different, you run into everything from You know, I would say a l modern MCP communication, API communication, but file based systems, database access sharing. It's prone to failures and it's prone to errors, and not just technical ones. Mm small mistakes in these integrations and integrated systems could result in large patient consequences. For example, in radiology, if you have mistakes on the patient jacket during the integration and suddenly images go in the wrong patient, you could go that could unfortunately lead to a wrong diagnosis or a misdiagnosis that could have permanent consequences for both the patients and and the clinic handling it. Where platforms are different is that the integration is built at its core. It is not a set of integrated systems. It starts from an integrated infrastructure, from an integrated it's it's a sel you know it's a self-explaining thing when you say platform in a technology world, but the main difference is You don't start, you don't have integrated points. It starts with a common data model, a common user model, a common patient view, a lateral patient view, longitudinal patient view across the entire journey. That lives on the platform. It doesn't live in the individual systems. You as a patient, you live on that platform. Individual systems just access and fill that information based on what they perform, like. my radiology or a pathology system, but you as a patient, you live on the platform and that is the main difference. Predrag, could you could you even say, yeah, zooming out, that this could also really change healthcare in general? Like seeing it holistically instead of you, you know, my arm hurts, so I go into the hospital for, you know, the department that fixes arms or broken bones for for whatever reason. But now technology is helping you to see it holistically so that (16:23.884) That would change also the professional base of from university on how professionals are being taught to look at human in general? Absolutely. No, absolutely. And again, this is something that it's sorely needed in health in healthcare and in in the healthcare world. Because if you look at today, health systems are asked to perform more and more with less and less. We have an aging population. We have, you know, less people going into healthcare for different reasons. So we have shortage b in anywhere from nurses to specialists to generalists. So we cannot continue working the way we are. The whole point of platforms is to simplify the life not just for patients but also for clinicians and for staff. So I do believe that if whether you're looking at EMRs, whether you're looking at imaging platforms, whether you're looking at platforms across the hospitals, this will fundamentally change how a health system operates. This will fundamentally change your experience as a patient in that health system. You are no longer going and and and and you know describing the same things to three different doctors because you're moved to a department. Everywhere you walk in, in any hospital around that hospital ecosystem, they have the same information about the patient. They have access to all your information and they can provide better care at the right time. And if you connect this with all the innovation that is happening wearables today. If you connect this with smart variables, both for you know, preact preemptive care, but also for chronic care and for care at home. Absolutely, whether it's aura rings, whether it's Apple watches, whether it's heart monitors if you are a heart patient, or whether it's diabet the diabetes pumps if you are diabetic, and how all of this information now again flows in this this really builds a holistic view of you. So when you walk in a clinic, And you start and come and complain of a headache and vertigo and whatever, it's you're no longer going to get the questions on well, how has your sugar been? And let's measure your heart rate and let's look at this. Because a lot of this, especially if it's connected also with variables, it's already there. A lot of your patient history is already there. And then is where agentic also comes into play and all everything that is happening new in the world. Let's just pause on agentic for a second, because I definitely want to come back to that. (18:45.778)

Thorsten, I was gonna come to you briefly, which is to pick up on Predrag's point there about almost like the digital twin of the patient is what that sounded like to me. That's being, you know, kind of almost in real time updated because of things like wearables. And I assume that's

for people who are not like me, who finds the idea of having wearables a acutely anxiety driving. But the for for those who are more sensible. And actually wanna do these things. Is that what we're moving towards, do you think? Patient digital twin. So to a short answer is in a certain way, yes, right. I think what has to be clear is that there are different, I would say, concepts of what a patient digital twin actually means. Right. So if you if you think about it at different levels. I mean at the at the highest level when it comes to having a a person and an image of let's say the basic fun body functions that are continuously being monitored. And and endpoints being measured on p potentially specific diseases like the basis that's that this patient has. We are very close to achieving that already, right? By if well, by using the the sensors that are available today, by combining it with diagnostic images. That is relatively close, right? I mean the the question that often arises is how you actually translate the insights that you get from that into action for the patient, right? Which historically, and I mean, Dave, you you mentioned that you it causes anxiety for you to just think about yourself as a as a fit twin. Yeah. Which historically has been a very difficult f task to do and to achieve, right? Because p a lot of people want to learn and if you have aura rings now, there's a lot of people see and use the information. The question is how do you translate inf that information into things that are actionable in the daily life of a individual? I think this is (20:48.352) More and more integrated view and more and more integration also of information going back and forth would actually help with that. But have we fully corrected? Not really. I mean, if you look at adherence, it continues to be a huge challenge in in the medical space. Now, the other version of a patient digital twin is going one level deeper and it's touching on on a topic that we actually discussed in in a previous podcast, which is more a patient digital twin for the purposes of of doing research. Which essentially then goes into the area of are you able to simulate how a individual person is, for example, at a more almost like molecular level developing and and processing drugs in or in her body or his body. Right. and from that we are still quite a bit away because we don't have necessarily the knowledge and understanding of how biology at that level in the complexity of the human body really works. That would be so cool, Tharson. You know, like I think it was in Vegas. I can't remember guys. But we were talking about the placebo effect of vitamin drinks. I think Marcel had like a a very I don't know It was r it was it was 'cause it was 'cause Rob it is Rob had the Immotable. yes, Rob had them. So you know I would be fascinated to see if if they actually work right. And on the other hand I was thinking, is your digital twin also gonna lie to you when the doctor asked, Did you s stop drinking or huh? We we talked about smoking, did you? But your digital twin is gonna be completely honest, right? Yes, twin is gonna be honest. I think that's why Dave would be so anxious about it. Right. I mean honestly, Thorsten, it's like you've read me. It's like you've seen straight through me. I do think that there is a I do think there is a point that we need to go back to, especially on the anxiousness of your data now being there across, you know, in in a platform across your digital twin or longitudinal patient record or however you wanna see it. I think that is actually a normal reaction. We find health our health data, our personal data very sensitive. We find it very private and we find it, you know, very anxious to share with other people. If you look at it from an impact perspective, and I'm just gonna very objectively talk about this, if somebody knows whether you smoke or you drink, the harm and I'm doing air quotes here because we're on a podcast, but the harm that you as a person could suffer is technically not it's it's it's benign. (23:13.27) Well, if somebody has your credit card information, or somebody has your financial information and social security in the US, then you know you could be, you could suffer large financial, mental pressure, and all of that. However, we're more sensitive about our healthcare data and we keep on giving our social security data around the world. The reason is because it's private and it's personal. And this is where I believe two three things come into play. One is trust and transparency. Patients need to know. How their data is processed, where their data is saved, who has access to their data, and what this data is being used for. The second is access to data. This is very important that not

everyone can see everything about you. There is no reason why everyone in the entire hospital ecosystem can see everything about you. People should only have access to the pieces of data from your data that are relevant to driving your diagnosis and providing you better healthcare. And the third one is, and again, I know we want to go to agents and agentic and AI soon, but. It's very important that as this industry is getting, you know, more and more exposed to this, keeping that human in the center, keeping the human in the center of all of it is more important in healthcare than anywhere else. Whether that is keeping you in the center of your data, whether that is keeping the clinicians in the center of the system that is fully agentically enabled with a lot of AI capabilities, we trust people, and there is a reason for that. And we need to make sure that these systems remain, at least for now, people centric AI empowered. So we're seeing a so we're seeing it an image come together then that there is platforms that are pulling together kind of for want of a better phrase, like the end to end process of medical institutions. So you can lay information multimodally next to each other. They may well have inputs into those things from wearables and other information to create more and more accurate pictures of the humans that are being treated. And also, you know, secondarily to that, some of those kind of digital twin type things of the patients might also then get used for research and various other various other different things. Quite an amazing sort of emerging picture there. (25:36.194) Before we go to the role of AI in that, because c clearly we'll get to that in a second. that image that I just sort of sketched out, where are we in terms of getting to it? What's the installed base at the moment and and where do you see that? You know, how do you see it maturing? Is it a fast maturity cycle? Is it really expensive so it's hard to get them in? Like w just give us a sense of where we are. So I think we are in a I would call it early accelerated adoption. So we are still fairly early in the process, but it's a very fast moving process. And the major factor here is not cost. The major factor here is that when you are going through this, you are basically replacing or modernizing or changing a lot of your existing systems and therefore also changing the workflow and the way a hospital works. So it's the transformation that is taking time, not necessarily the technology or the cost that are being the large inputs impacts. But I do see the not just the trend, I see the pattern where this is becoming more and more de facto standard of how hospitals, how healthcare wants to and is trying to operate going forward. And I certainly believe that in the I wouldn't even say decade, I would say in the next three to five years, we're gonna see a lot more large transformations, a lot more large. Hospital transformations moving towards the the the way of working. The technology is here, the platforms are here, the need is definitely here, the pressure on healthcare is here. So pr we are progressing through this, as I said, at its at an accelerated pace, but still early in the process. Yeah, it's much like it many other sectors have got the same sort of adoption challenges, haven't they? Which is if you were looking just on a whiteboard and you had no legacy and you had no disparate data and disparate systems, it would make just complete sense to put a platform in in the way you describe, but the but the migration to that platform is a is a significant lift. Because as you say, it will n not only is it is it a complex thing to do, but actually it's going to materially change how people work. And ideally that would be for the better. But humans and change, you know, they're they're sometimes not happy bedfellows. (27:55.648) I mean, of course, there is a human factor and the change control factor, but this is where really partnering with hospitals and ecosystems and partnering actually across the ecosystem really helps. Because none of us have all the answers. And when something is new, we will learn with every step as we get. So driving the proper partnerships and engagement makes us better every every day. So I believe the curve will be really an exponential one where it starts off slow. And then we see this accelerated pace as we learn more and as we standardize and as we develop best practices on how do you move from A B C to this, to a point where this just becomes a standard implementation, like in any other industries, where we go, like, okay, let's document what you have, let's document the workflows, and then let's put you know together design the new way of working based on

already predetermined patterns. We are still in a situation where we are. defining those patterns, where we're defining those workflows, where we're defining how these new systems integrate with the rest of the hospital. So I that's why I believe it's a little bit, I would say, slower at that at the beginning, but it's also quite understandable. How does that work? Do you do proof of concepts together inside the hospital to just see how they respond and get all the feedback or absolutely we do clinical partnerships. So we work with a lot of hospitals on early programs, whether they are platform programs, whether there are new scanners, whether there is new hardware, we always prefer to partner with a hospital or to partner with a clinic to actually not just prove something, but really call collaborate and really even design some things from the start. Because like you said, on a whiteboard everything is very simple. On a whiteboard everything is very black and white, especially if it's a white black board with a black marker. However, when you go into the real systems, there is many complications of real world that needs to be superimposed on top of that whiteboard. And this is where our partners, our our our our our our customers really come into play. This is where we go into really engaging, meaningful, deep clinical partnerships because they help us put the real world on top of our designs and make it work and make it stick. Because in the end it needs to work for them and for the patients. (30:10.2) Do you also see something in generations? Ca 'cause I can, you know, I I we all know those doctors that might, you know, they're a little bit older and they're, you know, they were used to doing everything with handwritten notes. We all know the doctor's handwriting, right? Or I don't know, but we in Dutch we know, that's a doctor's handwriting. do you see differences in there? Who do you get into the room to get like the broader perspective of different generations? So I think diversity of generations is important from multiple factors, but I do wanna mention that In my experience, it's actually a a bit of a stigma that doctors are, you know, set in their ways. We we all agree on the head handwriting. Don't get me wrong. Okay, okay, okay. Then we're then we're good. Like when my doctor friend leaves me a note, I I have to call back and say, Well, I don't know what you meant with this. But if you look at it professionally, dog the medicine as a profession is one where you don't just learn in college and you continue, they constantly evolve and it has changed over the years millions of times. I really do not see the generational, let's say, stagnation or the generational pushback of we are set in our ways. Quite the opposite. I do find that more experienced doctors usually are on the forefront of innovation. They're on the forefront of their experience drives what they need to be more effective and to be what more efficient. And they really are the ones that are pushing the envelope further, that are really pushing the agenda further. Challenging us to be better, to be faster, to be more efficient. Now, as you said, I do think diversity is important into everything. And you know, generational diversity is also important in medicine. So when we engage, we try to engage across discipline, across modalities and bring different views. Maybe some from generations that are more digitally savvy, maybe some more from generations that come from the past. Because in the end is that amalgamation of the past and and and the future that is really going to create the system that the hospital needs to operate. Hospital systems are extremely efficient. I think very few people really understand how how many patients go to a hospital. Once you start actually looking at logs, and I'm starting this from a technical perspective story, I'm a geek, but once you actually go through logs just to find like what is happening, and then you see and you go like it's impossible. It's not possible that they saw like 7,000 patients in radiology today, but it is. They did. 15 radiologists saw more than 7,000 cases sometimes per day. (32:36.408) Those are very efficient systems and every second for them counts. So us going and telling them this is how you do better doesn't work. It's us learning from what are your actual pain points today? Like this is what we have in mind, but how does this help you? How does this help you be more effective, more efficient? How does this improve your work? And then taking that input and building it into our solutions, building it into that platform, this is where the I would say both the beauty and the success of this lies in. So no, I I don't see the doctors being as resistant and

we don't need to depend on just the young generation. No, we drive on exper from the experience of the really experienced doctors, and I can assure you they are the ones that push us the hardest to be good at what we do. I would like to to change perspective for a second. I mean, on the doctors, actually, what what I realize for myself often is then I w when I think about the quote unquote old non-digital doctors. I keep forgetting that I also get older. And the old doctor I have in mind by now is long, long retired already. Because that was like 25 years ago. So I think one of the one of the pieces though you mentioned is of course the the change that needs to happen in the in the hospital systems when you integrate these platforms, right? But what I would like to get a view on also is when you look at it from an from a medical device company's perspective. It also means when you're moving into platforms that actually what you're bringing to market to a certain extent changes, right? I mean you have all of a sudden service components that come into play. You have like value that is generated at interfaces that you might not even have foreseen. You need to kind of continuously adopt what the platform does, very different from I would say what maybe a lot of the listeners are thinking about. They think about like individual devices that are being brought to market, right? So what does that mean for an organization like like yours to actually make that shift? Because I think it's not only a change journey for your customers, it's also one for you internally. Absolutely. And a very good point, often often overlooked, is not just what you deliver, but how you deliver it and how you work and think around it. So to just guide you through a typical medical device delivery like 15, 20 years ago. (35:01.47) You would have a multi-year project that goes over, you know, a design phase, a build phase, a prototype phase, a clearance phase, then a delivery and then mass manufacturing. Platforms and modern healthcare doesn't work like this. We work in a very agile way where we have actually we we had to change the way we design our systems. So if you look at the platform systems, what is usually the best approach that we found to design it is for one, we've we separate the medical and non medical parts of the platform. This helps with speed of innovation in the non medical piece, which usually allows us to adopt more and more interfaces, different data sources, be more flexible on technology and deployment models, and then keep the medical device piece, which is a very important piece, in a very restricted, very and when I say restricted, I mean from a regulation and safety perspective, in a in a completely different development cycle. So this is the first change that happens. Except the medical and non-medical, because the medical, every piece of healthcare software or hardware needs to be extremely safe. You're dealing with people and you're dealing with people's lives. It gets even exponentially more important when you start talking about the medical pieces of it, whether that is in imaging, whether that is in pathology, whether that is in EMR, in medical, in medication management. So all of these pieces have extra scrutiny on those, and if therefore they have different delivery and build cycles. So first of all, it's how you deliver and how you build. The second change in mind shift is how you how you d define what value is. Because when you're looking at a in isolated system, let's say radiology, value is again different for different views, but it's usually delivering the right images on time as fast as possible, making sure that a lot of the reporting is as convenient for the Radiologies as as as as possible, and you are really concentrating on the value in one segment. When you're looking at a platform, you really need to look what is the value for a custom what for the clinicians across the chain? Like what is the end value that I want to get? Whether that is facilitate better tumor boards, whether that is support their research, whether that is better patient diagnosis in case of multiple modalities. (37:17.72) So it's use we s we shift the mindset of w of starting to think from what the problem is, how we define the problem, and how we did how we design for the solution, and then how we implement. It's a complete change in the entire change of the in the entire chain of delivery of pro of a product. Let's let's go on to the subject we've been tiptoeing a around a little bit, which is the which is the introduction of AI into the system of work that you've just been describing. So it's quite straightforward I think to understand how that workflow might work across different

departments in a in a hospital or to Ez's point earlier to create kind of more whole views that are being presented, you know, in in one department versus another department. So how is AI helping here from like an agentic and I guess I guess a gen AI, but an agentic perspective? over the last few weeks, months, days, with the speed of the industry moving, we are seeing AI really penetrate every system in the market. And healthcare has been not been different. Yeah. If we look at healthcare, where we see the largest impact in AI is really at streamlining those clinical workflows and improving clinicians' efficiency. If you look at the work that a typical clinic clinician spends, a small amount of that work is actually spent on the patient and on diagnosis. The actual overhead that every clinician faces today in their day of work, whether that is documentation, whether that is administrative work, is actually dominating their time. And this is in every segment of the hospital. This is in nursing, this is in administration, this is in clinicians and specialists. So the largest and the first obvious impact of AI's energetic in healthcare is how can we take the work that is really irrelevant from these clinicians? And make sure that AI drives efficiencies there. Instead of them typing in a report from scratch, how can we present them with pre-populated reports based on either ambient listening, based on image analysis, based on patient history, and have them review and put in only the important details in that instead of spending a time to typing the entire report? How do we go from a radiologist having to look at you know the image as a completely brand new thing? (39:44.448) versus overlaying it with an AI image analysis, pointing them at potentially the right places where they need to look, or even helping them with maybe potentially early diagnostic clues on what they b what the agents or what AI believes it sees on this on the on the screen. So I would say number one is efficiency. We need to use AI and we need to use agentic to increase efficiency in the hospitals and make sure that the clinicians, make sure that the doctors spend their time when their time is most relevant and where their time is best served. Remove any administrative burden for them and make sure that they get back to doing what they love, which is helping patients, which is taking care of us instead of spending time writing documents and spending time on administrative tasks. The second piece I see really AI playing a big role is in and I'll stay out of research for a while because I think that is a topic that we can have a separate podcast altogether, but is really looking at and I I I don't wanna call it interoperability, but for lack of a better word, I'll call it there. health systems are not standalone units. They do receive data from all other external places, whether it's codes from coding systems, whether it's insurance data. All of this today is mapped, and all of this is data that constantly changes. Somebody has to spend time validating this every time there is a change. Somebody has to remap the codes and sometimes even retrain clinicians and retrain doctors because insurance rules have changed or reimbursement policies have changed. And this is all time that they do not spend caring and looking at patients. So AI will play and plays a major role in actually making sure that we go from dispersed data sources into standardized data streams and manages change management for us as well. And then finally, it's that first level to the patient, right? We are used to today when you call a phone on any service, your first input will be an AI agent. You're talking to an AI agent or you're chatting with an AI agent. (41:50.774) And I know in the early days it was frustration and everybody's first call was can I speak to a real person? But over the years, especially with LLMs and everything, this has gotten better to a point where I believe at my experience it solves nine out of ten ten issues I have. Healthcare is no different. Most of the times you're calling to say, Hey, are my results in? Right. Hey, you know, I have this schedule, I want to reschedule it. hey, I would like to know I got my results in, I would like to know what this means. In nine out of ten cases, an an a gentic AI and L L an LLM will help you get the that information, get it quick. And then if you still need more detailed information, you still need a person, you're of course going to talk to your clinician, but your access of information is faster. Is there an empathy challenge in that? Does it's a really interesting use case because you you know, like call center use cases with agents, quite straightforward, right? So if I'm if I'm calling up and I'm I don't know, calling up my car

insurance and I've and I'm talking to a f a a f a d decent sophisticated agent, I'm fine with that. In fact, it might even be faster in a lot of ways than talking to a human. However, bec you know, I talked about my health anxiety earlier. If I'm if I'm calling up about results about something, I am going to be an emotional mess probably. So yeah, so how does that how does that work, do you think, that interface? And this is why I keep on keep on saying before and I'll keep on reiterating it's people led a genetic experience. So in my view is when you call and ask, Are your results ready? I think you don't really care if you have a person or an agent tell you, Yes, your results are ready, you know, or no your results are expected at this and this. right. So they're not actually delivering the results. Or if you say, like, hey, where can I look at my results? Right. You know, yeah, somebody will point you out. But if you would like to discuss those results. Yeah. Yeah, yeah, yeah. Like I said, health, health is very personal to us. And this is where I believe that it's not the lack of agentic capabilities. An AI agent can discuss those results, potentially, I wouldn't say as good as I would never try to compare it with real professional experience and knowledge, especially in healthcare. But the human factor is there. Yes. The the the sensitivity and the human factor is there. So every time you are going to talk about what this means to you. (44:14.774) You will be talking to a human. You will be talking to a real person. You know, what does this result mean to me? What is the next step? what does this mean for my future? What should I be thinking about? are there any experimental treatments? Are there is there a cure? Sometimes it's all you want to know. It's like you have something and like, well, you you panic, you know, it might be the flu, but you don't you misread it and it's like, am I dying? I believe in these cases, you will not simply from a pe personal point of view. you will not be speaking to agents. Now would agents empower this information behind for clinicians? Absolutely. Yeah. But I still think that that personal touch, that human-led agentic experience in healthcare is where the future of healthcare is, at least for now. Critical. Thorsten, I wonder if you have a view as to that the characterization that Predrag just took just took us through there. is that what intelligent operations in healthcare looks like to you? Are there anything else, any other additions you'd have to that portrait of it? I think what what Predrag mentioned is can be summarized or elevated one level up even by saying, I mean, that's where what I would call like human AI chemistry comes in, right? because that means for humans to work with AI effectively There are a couple of components that you that need to be in place, right? And one of course, I mean, we've been talking about trust now. There's the question like where does trust come from? Right? And I think when you when you think about trust in in the collaboration with AI, it comes from a couple of components. The first one is actually similar to if you're working with an a colleague of yours, you need to understand what the AI actually doesn't is capable of, right? So you you need to know that, right? I'm just as as Predarch said, when you're going to see an oncologist, you usually know that this person knows something about oncology, right? So that's the first one. The second one is also in the in the engagement, you have to be clear on what's the role of the AI and what's my role. And that is coming back to the to the point that was just made. On it means you need to understand this is what the AI or the agent is gonna do, and this is what I'm gonna be doing, right? So if a patient is calling in. (46:37.622) I need to be able to trust the agent that if the patient is asking for can I actually discuss my results, the agent is gonna hand over that patient to me, right? And it's not like going into inadvertently now starting to to discuss those. And then the last one is from a more interface perspective, is really creating this interface with the AI that creates certain I mean, I don't want to say like emotional bond, but you can I mean almost take it like to an emotional bond. So it has to be like a pleasant experience at the end of the day. And that has to be true for every user or engage any person that engages with AI, for the physician, for the patient, and if you have those three factors, then you can create, I believe, a a chemistry and a co-working model and collaboration model that really brings additional benefit and is also being adopted and is being continued to be used. If any of those dimensions is missing. then it will fall together. I mean, just to make it very concrete, as soon as

the agent all of a sudden starts doing things in the process that's not supposed to be doing, I lose the trust and they're not gonna work with it anymore. Right? Yeah. So and and that's really something you have to ensure. And for for healthcare, that's maybe even more important than it is for some other industries. Right. And now of course I'm biased because that's what I do every day. but I think that's critically important. I I think it's true. I I think you're right. The the the the use of AI and and doing that emp empathetically in in different situations. And of course some industries just have a higher requirement for for human empathy on a day-to-day basis than others, don't they? Earlier on in the in the run of the show, we had a person on who was talking about the use of completely separate sector, but talking about the use of AI in immigration at borders, particularly where there is a lot of refugees cut going over that border. And and she was describing that in in in not dissimilar terms, which is if you know, if you're trying to get into a into a country across a border 'cause you are actually trying to escape from a certain situation, having a very robotic interfa interface that you're into who are making is making clinical logic based decisions would be frightening. (48:52.3) You know, that's it is really not something you want to be doing with your children and trying to escape a situation. So I think that in the human AI chemistry, always keeping an eye on it's not just a transaction sometimes. There's something deeper often going on is so important. We could talk about this for such a long time, but just in in in the spirit of wrapping up for today, I wonder, Pridrag, if you just do a little bit of crystal ball gazing for us. So, you know, you talked about the fact that We're on the beginning of this journey. I think the image of healthcare you you you paint is a a a transformative vision from often where we are today. And that me no disrespect to healthcare workers in that. I I agree with some of your sentiment earlier. They do an absolutely amazing job for society. But what what do you see the evolution over the next three to five years looking like? I mean, it goes back to what Trost Thorsten just said, to be honest. I do st I do think that Healthcare has to evolve from the point where it is today. It has to become more efficient and more effective. And the one way I see this happening is really this amalgamation of human and agents working together. The way I see it is that we are going to go through this transformation where the in our healthcare system as a whole will transform. You're going to go to integrated systems in the hospital. You're going to go through a pati and a patient clinician agent system where you have different areas being covered by different pieces with full transparency. We're going to go to a completely new experience for you as a patient and for clinicians. And with the way I see it is honestly a a end-to-end integrated platform-based system powered by agents going forward. (50:53.228) Now we end every episode of this podcast by asking our guests what they're excited about doing next. And that could be something in their personal life, like they've got a great restaurant book this weekend, or it could be something in their professional life, or maybe a little bit of both.

So Predrag, what are you excited about doing next? I'm gonna do a little cheat and do a little bit of both. So Yeah, go for it. Go for it. I'm actually due for a well overdone done journey with my family back to Europe. We've moved to the US about three years ago, so we're gonna go travel to Europe, see family and friends we haven't seen in a couple of years. Where are you heading to in Europe? Whereabouts? we are gonna go through a large part of Europe. So we'll first go to the Netherlands, visit some friends there, stop by Czech Republic, go to Croatia, North Macedonia, Greece. So it's gonna be a large long and exciting journey, but we're really looking forward to it. I spent a little bit of time in Croatia a couple of weeks ago for the first time. We were on a boat going round the islands just off Dubrovnik. It's really beautiful place. I I I know. Every time I'm in Europe I do have friends there, especially on the coast. So I do tend to selfishly want to see them and spend some time with them, partly for them and partially because they just love that view and I love the sea. And on the professional and also kinda personal note, I'm I'm very excited on what we're doing with Agents and Agentic right now in transforming the way we work. So whether that is me at home trying to figure out why some of my agents are misbehaving to Thorsten's point and they shouldn't be and trying to figure

out which skills or which rules are not properly set up or looking at our teams really evolve from on a daily basis to a completely new way of thinking just has me very excited. It's a great way to day to be alive. It's the beginning of the age of intelligence. So I'm as a tech person, I'm very excited to be part of all of this. Well, on that note, we wish you well, Predrag, thanks again for spending some time with us today. Thank you very much for having me. It was a pleasure. (52:58.326)

If you would like to discuss any of the issues on this week's show and how they might impact you and your business, please get in touch with us at realitiesremixed@capgemini.com. We're all on LinkedIn, we'd love to hear from you, so feel free to connect and DM if you have any questions for the show to tackle. And of course, please rate and subscribe to our podcast. It really helps us improve the show. A huge thanks to Predrag, our sound and editing wizards, Ben and Louie, Thorsten, our co-host, our producer Marcel, and of course to all our listeners. See you in another reality next week.

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