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# CLOUD REALITIES

## CR049

TechnoVision 2024 part 2:
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[00:00:00] You know, I, I had a meeting that I was really boring. So I took up myself for like 10 minutes and then I run it in loop. And I went, I switched off the camera and it was just running.

Welcome to Cloud Realities, a conversation show exploring the practical and exciting alternate realities that can be unleashed through cloud driven transformation. I'm David Chapman. I'm Sjoukje Zaal, and I'm Rob Kernahan.

And we're back with the second part of the TechnoVision 2024 launch specials. In part one, we talked to Ron Toledo about the overall themes of TechnoVision 2024, as well as the underlying trends.

And in this part, part two, we are going to talk to Robert Engels, who runs [00:01:00] the Group Gen AI Lab here at Capgemini. And we're going to delve deeper into one of the main trend areas, which of course is around Data and generative AI. But before we get to that, when Marcel and Sjoukje and I were on the platform that we record the podcast on regularly, we were wondering why Rob was late one day and we were sitting there having a chat and all of a sudden Rob popped up and you can, we can see each other on video and behind Rob, we can see his room.

It's a very lovely room and spread out on the floor was, I dunno, I think he said it was something like 7,000. Bits of Lego, like all, all immaculately set out color coded and by size. And we were like, Rob, what are you working on? And he was like, I'm, I'm trying to work out a physical data model, but I'm not quite there yet.

I'm not sure how you, how well you got on with that, Rob, it probably pertains to some of the things we're about to talk about. I'm not really sure, but what are you [00:02:00] confused about this week? That was very creative, Dave. I like that. I love the idea of actually building a physical data model. Yeah, yeah.

Create it with Lego. I like, I like the idea of like, if you're spending ages spreading out all the pieces. Color coding them. I thought it was much like most large organizations when they're trying to get to grips with their debt, you see. I was having to sort out the taxonomy issue right at the beginning because that is the crux of many bad failures in taxonomy.

Now this week, you always think about this the other way, if you get technology right, there's some technology that's well aged but very successful. And may fall out of vogue a bit, but comes back in, but deserves to survive. So technology that can survive, so a good example is the record player. Yes, I was gonna say vinyl, love it.

Yeah, still represents a great value prop. And there is other technology that is still long in the tooth and legacy that should have been deleted a long time ago, but for some bizarre [00:03:00] reason still exists. And I'm going to use the floppy disk. Right, three and a half inch quarter floppy disk, 1.44, can't store a lot of media, terribly unreliable, hugely clunky, has been surpassed so much, you know, you can buy this little SD card, two terabytes of storage, much more reliable, much faster than, however, a lot of technology, apparently, still uses the floppy disk, and I will use 747400 series as an example, I checked this out, It's There are still 49 flying around the world.

Some, or half of them, are owned by one very reputable airline that I won't mention. And apparently, for the flight control software, you still need to service it with a floppy disk. And I'm thinking, how has that technology that has no redeeming quality feature, is inherently unreliable, doesn't store a lot of information, still embedded in critical infrastructure like airliners.

And I was just, I'm just generally confused by how it survived. I think that's more like frightened than confused. Yeah, I didn't know that, knew that and I'm a bit scared now. [00:04:00] So my take on it is the something like vinyl, right? Which is you would think it got superseded by CDs. And, and to a certain extent during the nineties in particular, it actually succeeded like vinyl production stopped pretty much and CDs were like, just absolutely the way everybody consumed their music.

And then there was a few little goes at things like mini discs and all of those sorts of things wasn't there. And then streaming of course came out and like lots of physical media stores closed down. But then the interesting thing about the vinyl resurgence to me is a return to consuming. Art in a way that sort of physical it comes with experience with the technology that we experience or playing it the actually the physicality of putting a needle on a record and it being an analog sound.

Richard warmer yeah rich a woman necessarily better i think that's a debate with [00:05:00] this whole of the podcast series in its own right probably know i would differentiate that like the return to something because it has intrinsic value is a different thing to. Maybe they just haven't updated fast enough.

Well, so it's this thing about, there's, it's so easy to replace with something faster, you know, faster, better quality, but yet the floppy disk has survived. And, and is it an engineering trait that it's not broken, so don't fix it, we don't have to change it, but there is this, why are you still using something as crap as a floppy disk?

Well, I think we'll leave that there. And you're right, that is. concerning and I actually love the 747 just on the record. It was a very good play. It's still still a fair few flying, but yeah, some of them are still using floppy disks. It's the height of flying sophistication to be in the bubble at the top.

I honestly, I honestly don't think it's going to get any better unless you're on a private jet. I don't think it gets any better than the bubble at the top of the 747. Absolutely spectacular. Anyway, on that note, welcome to part two of TechnoVision 2024. Robert. [00:06:00] Good to see you. Thanks for making the time to come and chat with us about this.

Do you want to just say a couple of words of introduction? Tell everybody about yourself for a minute. Yeah. Thank you for having me here. My name is Robert Engels and, uh, I lead the global GenAI laboratories for Capgemini. So we are diving into depth in different aspects of AI. Makes a lot of fun and I've done it for like maybe three decades now, which makes me sound like a mastodon, I think.

But on the other hand, there might be some experiences that we see that are still needed. In part one of the two part episode on TechnoVision 2024, we talked to Ron Toledo about the overall themes of this year's report, as well as the 37 trends. So the main theme is around Augment ME. Where it specifically talks about augmentation of our environment, now a digital environment and the things like AI can provide to support humans being more effective.

But it was a salient [00:07:00] reminder of the human that's in the loop and the human that sits at the center of all of this and how to make that human more effective. And then Ron also made numerous points about how that level of augmentation can also bring about a new view of what the human is capable of.

And then we talked about the main trends, which was summarized into six different containers, which were around the infrastructure, the application, data, process on the fly,

user experience and collaboration. And then finally, how it all comes together into some design principles. Now data and AI, it won't surprise anybody to hear, was a very thick thread through all of the trends and is central also to the Augment Me theme.

So what we thought we'd do in the second part is actually dive deeper into the data and AI trend itself. So, Robert, give us your view to start with on That thread. So data and AI is probably always a core thread in something like, [00:08:00] uh, techno vision and thankfully, and you'll be, you'll be relieved to hear this Robert, because the other Robert on the call, Robert Kernaghan has been around long enough to be there at the inception of techno vision, 2020, right?

Yeah, I remember the heady days when it appeared for the first time was that TechnoVision 1971 Rob? It feels like it it's been a long old road My thesis then here is that data if it wasn't in the first couple has probably been a very long running Thread throughout TechnoVision history. Is that right?

Would that be fair? Yeah. So lots of the themes have sustained in TechnoVision in the, uh, in the early days, it was called thriving on data, where we were talking about bringing your silos of data together, getting better understanding of what was going on, operational excellence, which, which maintains a core theme for all organizations.

And, you know, like the compute used to be called invisible infrastructure. Which was about this the cloud abstraction and everything is [00:09:00] code and sort of like coming in and we had the you experience which is all about the personalization of tech and i think over the 17 years that we've been releasing the publication that it's evolved into what we know today and it's kept it's kept um it's kept track.

With what industry, of course, that's the idea. It is thought leadership. What I like about it is it just gives you that forward view and the things you need to think about. So it's a great prompt when you think about what's happening in data, what's happening in compute, what's happening in customization and experience, etcetera.

But yeah, many years ago, I remember it very well. I used to. I used to talk a lot about the you experience back in the day when dinosaurs roamed the earth. Yeah, apparently back in the late sixties when Rob started to start first working on TechnoVision, um, they were just basically understanding the first concepts of data and mainframe technology.

But Robert, bring us right up to date. The fun part is thriving on data is still called thriving on data. So the topic of [00:10:00] data has not really changed. It's not the voice that you collect, it's just the volume that changed. Yeah, it's, it's the, uh, some of the underpinning subtlety and concepts have changed, but that's what I love about TechnoVision, the ethos of it and the core remains very stable and consistent, which shows you that all those years, I think it was 17 years ago, was it?

Something like that, that we started. The things we were talking about there have become the things that we are actually implementing and doing now. So testament to the the early iterations of the theory. So Robert, why don't you bring us right up to date? TechnoVision 2024. Where is data sitting? In the work this time, and how does it inform all of the other ones given, you know, the rapid increase of things like JNI adoption over the course of the last 18 months?

Yeah, the interesting thing is, I mean, like I said, the container is still there, it's been there all the time, so thriving on data is there. You see that many of the topics that play a [00:11:00] An important role in thriving on data. So the data sharing is carrying trend power to the

people transit on there.

They're still there. We got some new things coming up because we're scaling up our thriving on data. Sorry, not beyond not scaling up the container. We're scaling up our data landscapes and ecosystems and new issues that pop up are, for example, about the net zero data. So can you actually, uh, work on sustainability?

Because we are really Creating a lot of data graveyards that are on spinning disks and use electricity the other way around. If you have an enormous amount of data about your context of your organization, can you use that data to become more sustainable? So these kind of issues can now play a role. So that's, that's part of the container as well.

Uh, so, uh, another trend was the thing with data. So really data at the edge, we have an abundant amount of data that is created at the edge now, and more will come. And, uh, that data can actually also allow us to get [00:12:00] better insight in the context that automation is working in. So, uh, and automation can be different things.

AI is definitely part of that. We look now into that. topic as well. So how can we actually already at the edge work with and on data and what can it mean for the rest of the the tires around it. And then we have a new trend that we introduced now with the whole generative AI and yeah hype that is coming that came up last year that it is a different type of AI that is uh, More and more fussy, more probabilistic than what we have done before in many cases, uh, with some great unknowns that we will discuss, but we have a part of the trend is my AI generation.

So what, what can this, uh, data do in combination with this creativity that comes into the right. And do you see a path forward at the wrong? Because one of the things we've talked about a lot when it comes to the use of data. With [00:13:00] AI is that a lot of organizations have struggled for, you know, 20, 30 years in terms of things like master data management, data organization, data structures and big data comes along and it was unstructured.

You could have masses of it and that gave a little bit of a breakthrough, but there was still a need to actually fundamentally understand your data and harvest and orchestrate your data are we finally getting to a point where. Something like a data fabric can be put in place that just allows us to leverage our data as it is today.

Yeah, I think what we, what we've seen throughout history is that you, you get to the next level. And I think this is one of this moments that we get to the next level, but it will not solve all problems. So there will be a level after that as well. An organization today then so they can they can go straight into leveraging their data sets even if it's quite unknown to them at the moment they don't have to go through like an 18 month period of like [00:14:00] data cleansing master data management structures data hierarchies all of those sorts of things.

That's what we're trying to find out at the moment. There's different issues that topics that are the one is that if you look at the really large language models that are the first real. Generative AI models that are trained on, on, on huge data sets, they have their issues and they hallucinate, they make errors, they have issues.

And part of that can be because of the prompting. If you prompt, you set the context on your, uh, on your task. If you do that wrongly, you will get hallucinations. Others are simply because these models have problems and issues with the data. And we are just about to find out what that actually implies in this kind of models and, and how you can work with, with that and around that and fix these kinds of things.

And we have found some, some solutions, I would say that we have seen starting to get commodity, but there are many of [00:15:00] those are actually based on, on good old strategies from before. With with other AI technology, the more traditional AI and maybe also even other things. So you can imagine chat GPT only works because it uses reinforcement learning from the nineties and even good old knowledge management from the eighties.

So the strategies around these have been known. The technologies have been known, but. putting them together helps. That is one thing. On the other hand, we have the whole data engineering. Uh, that is still an art that you will need because one of the solutions to make generative AI stop hallucinating is, is really using, for example, a rack approach or a vector database approach where you put in your own data.

You give these things your own data, you give them crisp knowledge so that they can Create some kind of rhetorics around that, a query answering system or, or whatever you need, that is basically the same pipeline as we, as we have had, uh, the last years. [00:16:00] So I think on the data engineering part and just data pipeline part, much will stay the same.

This year as well, you will still need to do a good job on that, because if you can't trust that pipeline, you can't trust the answers. Can you exactly right? Yeah. So, so actually, maybe just as an extension of that one. What does a good data ecosystem look like? What are the major components of it for you?

Well, what we have seen just before the gen AI hype was this whole data mesh, uh, topic and data mesh and data fabrics and all that kind of things were actually. Approaches or our approaches because they're still just as actual, they're just like under snowed by a new hype, but they're very important elements of this.

So I think if you have a good data fabric or data mesh, uh, based ecosystem, you, you will be able to tackle a lot of the scenarios that you will have to tackle if you want to apply generative AI at scale in your organization. So let's use that as a bridge then into generative AI itself. So Gartner.[00:17:00]

Recently have published a report that basically has is looking at investment trends across IT departments and tech departments in all kinds of organizations. And one of the interesting things that pluck out is that for all of the noise and hype curve stuff that's going on around Jenny at the moment, actually, the investment in it was still looking much more like proof of concept, but maybe a step on from skunkworks, maybe into MVP.

But it isn't looking like mainstream investment yet. So when, when you guys were looking at 2024 from a, from a gen AI perspective, how were you conceptualizing where it's going to go between now and the end in terms of the techno vision trends? Yeah, what, what we, we have a few observations that we have made around this.

And then of course there is an, uh, an increasing interest in building smaller models. That you can really use for specialized tasks built on your own data and [00:18:00] your own knowledge and information of your organization, which you can then train much cheaper than using the real large ones because they're very expensive to train.

But that goes on the drawback that you have to specialize the task. But if you have specialized agents that perform specific tasks very well, you can have several agents that do several tasks and together can train you. Solve complex tasks. So that's one of the trends we see that I would say if you come back to the investment part in the POC discussion, I mean, AI, like, like you said, in the introduction, it's just like, I've been fighting windmills for many

years, and the windmills were actually this this value of data for AI, you have this nice picture that after the POC comes to data landscape in the data ecosystem.

And then you will not be, uh, getting out there for the next two years. You just get bogged down, bogged down in the challenge. That is obviously a thing here as well. Although I must say we also had the cloud [00:19:00] revolution in between and the cloud revolution really centralized a lot of data and had.

actually the effect that many large organizations have a much better control over their data. So for reg like approaches in Gen AI, and so I think that the gap between a POC and having something in your organization at scale is much smaller. At the same time, there is an uncertainty. I notice an uncertainty in the market.

If I talk to the management of these large organizations, they hear very positive rhetorics from the makers. Of this technology at the same time they also hear a lot about what can go wrong and that the effects and the risks are severe. In many cases, the costs are high, so that makes them very unsure where to use this and what what's to actually mitigate and on the investment cycle as well.

Is there a view there was some conversation about this, but a view about the risk associating with putting your money in the wrong place, considering [00:20:00] legislation that might come down the road with AI and ethics that says actually. You aren't allowed to do that, or you need a special license to be able to use data in a particular way.

Do you think that's holding back some people putting investment, the fear of what regulation or do you think we've got over that? And, you know, it's more about we have a good idea of what should be happening. I think that is a bit. There's two answers to that one on the side of using the large language models provided by the by the main suppliers to four or five large language models.

I think this might be a blocker for a moment, and the reason is simple. They don't. They're not transparent on what they actually model. So you have no clue whether there's some risk to mitigate or not. So I think on that hand, it is really a stopper for the smaller models that you can do yourself. I think this, this question is much more answerable because that scenario it's pretty similar to the traditional AI scenarios where you have your own data, your own stack, you train your own, you roll it out.

So you've got much more control. So I think that [00:21:00] that's a two sided question. The other thing that occurs to me when organizations are starting to think about AI and use use cases is this notion that I think you're covering tech on 2024, which is the use cases are really quite similar use cases to ones we've cracked in the past.

And people are pulling forward use cases that they're quite familiar with and then applying Gen AI to them, you know, to create some perhaps marginal or incremental improvement on what was gone before, rather than using AI to push into things that haven't been done before or we or we struggle to imagine right now.

I wonder in techno vision, have you pushed into that space at all? No, we didn't. We didn't really, uh, Touched into the space of that because it was not relevant for what's coming up I mean We have the observation that use cases in general that are now proposed for generative Ai are not very different from [00:22:00] what we've seen before ai and for without with a few exceptions, of course because What we got now is a much better interface between human beings and uh machines, right?

So you have multilingual capabilities that are beyond what we have seen before It's

impressive also with non native speakers, which was my challenge with many NLP systems. Uh, so these, these new, this new type of technology is really good at that, but it's still the use cases that you see that we tackle at the moment with a lot.

Success are use cases that we have been tackling before like chatbots like co pilots for programming They have been there all the time rational rose 15 years ago. Yeah in the late 60s robert Oh my word, you're bringing back the past now in phrases like that Yeah, but this is the thing, you know, like if you use rational roles, you also have this, this co piloting there.

Good point. Actually, it has been the [00:23:00] theory of the ideas been there. It's just the quality of the outcome that is given. So it's a new tool and this tool is very powerful. So it's a stepwise change. I think in, in capability, really, it combines a lot of things that we were looking for. So that's good, but it's not solving everything.

So there are still a lot of. topics that you would do with more traditional methods. No, right. And that will be the, the thing that we will find out in 2024, how to hook up this, this new, more probabilistic, more fussy technology that can interpret our fussy thoughts into stable. compute and stable outcomes.

I think that's what we will see. And do you think that we might push past the use case as early as 2024? And by that, I mean, clearly it makes a lot of sense to be use case driven in the implementation rather than starting with horizontal platform implementations. But there has to come a point where.

Organizations could get very, very, very complex, very, very quickly if it's [00:24:00] just tens, hundreds or thousands of use case implementations of these things, and there are two things that interest me about what that tipping point looks like. The first is what does platform AI? Ultimately end up looking like.

And then the second thing is when you start to aggregate use cases across an organization, what do you think the organizational impacts are going to be? Yeah, I think, like I say, if, if we actually tackle the problem of getting a more robust output of these processes that are driven. With all these different types of AI, then, uh, I think you will see a real new development in the direction of AI driven operating systems, AI driving whole systems, uh, at kernel networks, self healing ecosystems.

I think that will be on the other side. But we, we need to work towards that goal to get that, to make that happen. But you already see some, some [00:25:00] early signs of that. There is already some implementations and some showcases that, that show this kind of behavior and scaling them up and putting them out in the real world in the real context is still problematic.

I think we will have to tackle that one first. And that will really require a better understanding of how to put AI at scale in production with a real world context. Well, this is, I mean, Dave, you brought this up the other day with a conversation we're having about efficacy versus efficiency. What does a platform give you?

It naturally gives you efficiency and ability to execute at scale. But first off, you need the efficacy. Of the use case to prove it, understand it, get something that you know is achievable. And then there's this process of translation. And this is we had that debate about whether the two are incompatible and you have to focus on one or the other.

But if you try and do both at the same time, you're going to end up in a whole heap of mess. And you think about how startups operate its efficacy first to get [00:26:00] a business model out. And then they often consolidate. It feels to me like I is going that way where

we're We, you know, we're going to show we can do it and then we'll work out how to industrialize it later.

However, the pain of industrialization on the type of scale we're talking about is going to be considerable. Yeah, we've seen a lot of it. This is my moment. I'll sound like you're swearing slightly there, but we might have to beep a bit of that out. Yeah, that's what I'm thinking. Beep it. At Focus here. We have seen this at Focus here at the beginning of last year where there was a lot of focus here on this is going to solve all our problems and then reality hits, of course, and then What we are experiencing now is that there is a lot of try out and a lot of testing without really taking into considerations the real risks and [00:27:00] they are getting visible now and only after we saw that the first invoices came in and because until summer last year, the first six months, everything was for free.

And then after some of you had to pay and now, now people, managers get bills on their tables and they ask themselves, do I really get something back for that money? What are my people doing with it? Are they playing around? Are they, what are they doing? Making funny pictures of unicorns, you know, like, do I want to pay that bill?

And that, that also isn't related to this risk issue because they know there are risks and they can't identify them, uh, upfront. And that is a real issue. So we do have, yeah, work to do on the trust and the confidence part. And there's always that, you must be safe, you must be legal, yeah? At the, you know, at the core of it, whatever you undertake must be a moral action and done with the right justification and check that.

Yeah as you say perfectly what are the unintended consequences of the path you're [00:28:00] walking down and a lot of people in an organization that might be fearful of maybe falling foul of that but there's also this bit about if you don't where does that leave you as others outpace you by using the technology and it's like a tightrope walk isn't it about you've got to embrace the new but ensure you still sort of stay on the right side of the good.

Yeah, that's why we really say everyone should experiment with it and get experience and actually start to understand what it can do and cannot do. So that is for sure on an individual level, but also on an organizational level. I mean, the technology is there to stay. I mean, it will not disappear. It's not going away.

It's out of the box. It's fair to say, though, that at the moment, AI for all of its heralding still struggles with certain issues and certain problems is easy. It's not, it's, it's by no means a, a perfect multi modal multi contextual technology yet. So Robert, first of all, unpack that a little bit. [00:29:00] What are, what are the issues that they are that we, we can see at the moment and the constraints and therefore how should it be well used?

Yeah. Uh, so yeah, that's a good question. Where to start? I would say as a lives language models are, are, as we know, uh, trained on, on huge amounts of communication between people in some of the other sense. And this is modeled in a probabilistic way. So what models do this, this large language models is really Markov chaining on character sequences.

And if you appreciate that fact, you, you would probably not use it in any case where you want to be correct because they cannot guarantee that they can be correct people. Because it uses a language that is very, very authoritative. And this is the first time really in human history that we have something else than humans talking to us in a way that makes sense.

So we, we are a bit like overwhelmed, I think. And we, we actually give it much more credit than it should have. [00:30:00] The answer is, I mean, and then we use it for things that shouldn't be used for. So for example, mathematics, uh, two plus two is four and GPT four

costs you 6 cent or something. We do have a calculator from the seventies that does it in 00.

1 microseconds. I think Robert still has one. So slide rule, but I started on slide rules. He's got it in his breast pocket with his pocket. Protective top pocket, a couple of pens and a slide rule. And I know where the real actions are. How would these new things do it for zero for, for a micro sense? So why, why not use that?

Huh? So that is, and you see that kind of functionality starting to become more common in these implementations, but. Then with the router. So what they now do is the language model identify something as a formula or it's a summation or product of something, some, some numbers, some mathematics, and it just writes a little Python script and then executes that [00:31:00] Python script in a, in a virtual space, gets an answer returns, which obviously is correct for the, for the calculation, you cannot guarantee that the Python script is correct, but.

The outcome of the Python script will reflect what went in there. And then that's what you do with the calculator. Uh, you know, you receive a math problem. You go, ah, the, the AI, right? The Python script, same as me picking up the calculator and punching in the buttons. I might get the punch of the buttons wrong and then read the result and might be wrong.

But that's a, that's a human trait in the sense that humans are not infallible. Yeah, so we get actually three different directions than to distinguish between. One is the multi capable systems, so that have different capabilities. So mathematics, uh, engineering, physics, uh, logics, reasoning, all that kind of abstraction, all these different capabilities are lacking in a standard ILM because it's just imitating them.

But we did implement logics. We did implement physics in Wolfram Alpha, for example, [00:32:00] we did implement mathematics. So we can use that. Externally. And then if you combine that with the smaller language models that are trained for very specific tasks and running as a multi agent system, this multi agent system can represent that kind of capabilities in agents.

So there can be a mathematical agent, a calculator agent, you can have some reasoning agents, and they can together find out things. So that is one of the ways I think you should look at it. So multi capability, then you have the multi modality. So one model can actually tackle different modalities. And that is done images, text, sound in one and the same model.

Uh, and that, that is a very powerful trick because, uh, if you look at it, uh, for example, with procurement and so on invoice, uh, Together with graphics and text together with the text, that if you can combine these things, and we have been looking for that Holy Grail, and now we have something that starts to work.

So that's a multi [00:33:00] modality is going to be very important, of course. And then, yeah, like I said, the third one is the multi agents. So we have multi agents, multi modality, multi capability. But I'm interested in also the contextual aspect of its use. So I think we were talking earlier about the notion that AI as it stands today.

Can be very good within the context within which it's trained, but you take it out of that context and you put it in a different context. It's, you know, no use with all I would say. Also, the more traditional way I if you put it into real life work in production somewhere in real life in the real world context, it will have problems and we have not solved that.

So it will be the same with this large language because they're trained on a lot of data. Uh huh. Uh, many, many different contexts, much more than we have seen before with more traditional AI, but it's fussy and you have to guide it into the right context. That's what you

do with prompting. [00:34:00] Prompting is nothing more than putting it in a context.

Does that bring us almost full circle back to Augment Me where the human in the loop. Which because we are multi contextual animals can provide the direction to it. Basically, I like that thought. I like that thought because I get often the question like, okay, where, what are we human beings going to do in 10 years?

Are we going to be on holidays all the time? I think. What we are extremely good at and extremely well equipped through the last 10, 000th of year of evolution is really we're surviving in a context in the real world. We, we have a multi modality in our perception of the world that these machines cannot capture yet.

They don't have multi model in. I mean, a Tesla only has a camera. It's only recently LIDAR was added to the game. It was only vision and you should survive traffic with that. It's not good enough. There's many more modalities that [00:35:00] you need to be able to tackle. And I think that is, that is the issue where human beings are far superior, uh, over all AI at the moment.

And that is being in the real world and understanding the context. I do wonder though, if you talk about it, are we all going to be on holiday? Is the vision of the Morlocks and the Eloi actually coming to life where half of the population lives the life O'Reilly above and somebody still has to stick around and fix it when it goes wrong and do the plumbing?

And it's that which is the half of society, happy days, the other half, uh oh, maybe not. Maybe the vision from the, was it, when, when was that book, when was the Time Machine written? Was he, was he like a hundred years ago or something now, is it? Must be close to that. Maybe it was the truth sayer of the time.

I mean, in another sense, we already experienced that. If you look at, uh, at Norway, I mean, the Norwegian society, people that are here for several generations, uh, there's a lot of work they don't want to do. So they import people to do that. I think it is, uh, The same, [00:36:00] but what I think the real, I think augment me is a good concept because what I really think is that in a few years from now, we will be really in our context in the real world, having a lot of tasks automated, be it transport or whatever, products, organizational processes, whatever things will be automated, we will be the context interpreters for many of that and we will set our own context.

And these things will have to react on them. And I think in that sense, there will be an augmentation with the digital world.

Sjoukje, what have you been looking at this week? So each week I do some research on related ideas in transformation and tech. And this week I thought we should take a look at what industry experts think will be the tech trends for 2024. So we covered this in the [00:37:00] episode with Ron Toledo as well. But each year, Forbes publishes the expected tech trends for the new year.

And this year, a total of 20 trends are published, so most of them are around AI, and I want to focus on them in this part, and there are a couple of them that I find very interesting, and I'm looking forward to your vision on that as well, Robert. So one of them is AI plus. which means AI plus cloud, AI plus security, AI plus data science.

So, uh, technologies in every domain will gain expertise in applying AI tools to their technology problems and their daily work. The other one is dark AI as a service. Global threat actors will call upon a chat GPT like solution to craft malicious attacks. Oh God, that's got problems written all over it.

Yeah, they're just, oh my God, dark AI. Anyway, sorry, shall we do continue. The last one, my favorite, proprietary AIJ agents. [00:38:00] So we will see the introduction of these types of AI agents. to manage all of the AI tools a company has deployed across their organization. And these autonomous agents will interface between humans and tools, equipped with the ability to speak the language of both.

So a question, are these going to be the big trends for this year? My view is, if you sell a thing, You know, we joked about the internet toaster a few episodes ago where somebody marched in and said internet enable all of my home products, including the toaster. And I think I think almost all of us on the call welcomed that Robert, you were skeptical.

Yeah, no, no, but that now I think a lot of people. Awaiting for vendor organizations to implement AI plus into their product and then they want to configure it and use it. I think that's a that's a hope. I think everybody's suddenly had to redevelop their product roadmaps [00:39:00] to work out how they're going to shoehorn in.

You know what early implementations will be very clunky, but I do think it's a it's now going to become table stakes in things that you use and buy and consume and it will become expected. However, The maturity of that is going to take a few years to kick in. So I think there'll be this rush and you can see it in marketing.

Everybody puts the AI word into everything just because they think it's the right thing to do. It's going to follow through into products yet. And I think that's the next thing that we'll see. So there'll be a rush and I hope people hope that the products they get will be AI enabled and it might become a differentiator for a while and then we might get a bit bored of it.

I don't, I don't know. It depends on the success of it. I think the differentiation is, it's got to be whether it's gimmicky or actually adds value to the product. Isn't it? Right. You mean like the internet connected toaster? Yeah. Very nice. I recall on that episode that Sjoukje was actively, I don't think I'd ever seen him more excited than the idea of a toaster that you could set the night before you went to [00:40:00] bed so you could wake up to toast.

Oh, I, I, I want one. I really want one. Yeah, you never watch Wallace and Gromit, I guess. Yeah. I mean, they solved all this.

Come on. So this notion of the dark AI bot, so the idea of that, if I understand it rightly, is you would be able to sort of ask it questions about what a black hat AI would do. Is that, did I get the gist of that right? But also, uh, write those phishing emails, right. Using shared GPT. Oh, right, I see what you're saying.

Okay. So it's the use of AI as a, as a negative. Yeah. Yes. I get it inevitable, right? Oh yeah, absolutely. It's happening already. I assume it's already, it goes third at that one as well. I mean, last week there was, in that paper published from some research is that, uh, actually proved that you can crack guardrails of any of this large language models by using the other large language models. Yeah. Right. Right. I love it. AI against AI who has the better model and who's going to [00:41:00] win. It does feel like a bit of an arms race with technologies about to occur about the forces of good and the forces of evil.

I saw a little thing on Instagram where somebody had got a mobile phone with one AI on it and another mobile phone with another AI on it and it asked both of them to have a conversation about how to remove humans from the planet. Brilliant. And it came up with a number of pretty useful suggestions.

Well, so this is the thing though, you go back to, if you ask a computer how to reduce CO2. And you don't give it any guardrails. Its answer will be get rid of humans. Yeah, that's the

answer. Right. That's the logical, very cold, logical answer. However, humans might have a different opinion on that one. And so it's this setting it up so it doesn't come up with like answers like that.

So it understands that that might be a bridge too far. Right. Robert, any final thoughts on AI in 2024 from Sjoukje Trends there? No, I think that definitely, I mean, this completely AI [00:42:00] platform thinking with AI plus is definitely something that we will see a lot about. I, together with the dark AI as a service thinking, I think we should Have a decent discussion and that will arise on on single points of failure.

Uh, if you actually start to Integrate all this in everything there will be probably a few actors that might be your single point of failure And that will definitely be it The topic here, I think. And you had the last one, kind of an AI agents to do your work within an organization, for example, your, your personal agents.

That is the augment me scenario. I think I feel that we have in TechnoVision . So it fits well. I think once we've got an AI that can send five incomprehensible emails a day, our producer can be replaced. Well, I, yeah, but, but this is the thing. This is the thing. We, we, if you send me an email, Robert, that is auto generated, and my [00:43:00] bot is actually answering you, that might be fun.

They might find out how to remove us from the equation, and they already did then, by that sense. So, I mean, but what is the value of this conversation? Just generating loads of data. Right? Yeah, we already have a lot of it. I'm not sure that's unique to AI though, is it? I think humans are very good at generating money.

I think humans are really good at having conversations where you're like, what is the value of this conversation? Yeah, but, but actually all that conversation has led to large language models because now we have enough data to train large language models. So they're going to be incomprehensible as well.

And that's why they are so good in deceiving us and actually make us believe that things are true. Because they're just regurgitating what we are telling each other. Well, I'm looking forward to the, uh, TechnoVision 2026, where the overall theme is going to be rise of the robots. What do you reckon? Oh, welcome our robot overlord.

I mean, we've been here before, but I do believe it's happening sooner than people think. That dystopian future. [00:44:00] Exactly. Look, on that note, Robert, thank you very much for joining us and giving us a deep dive into some of the themes and the provocations of the data and AI section of TechnoVision 2024.

You're welcome. Now, we end every episode of this podcast by asking our guests what they're excited about doing next, and that could be looking out of your window, running out into the snow and building a snowman, or it could be something that you are doing in your professional life. So, Robert, what are you excited about doing next?

Oh, there's many things I'm looking forward to. Of course, like you say, building snowman is nothing bad going on ski. It's beautiful weather in Norway with snow and minus five. So that's one thing summer coming up. I like that. And I would, I cannot wait to see the future actually later this year. So in summer, we should maybe have a recap and see what happens after this podcast, because that would really be something that's cool.

I think there will be a lot of changes that we even now cannot really foresee. [00:45:00] And so I'm really looking forward to some more radical things that happen. So a huge thanks to our guests this week. Robert, thank you so much for being on the show.

Thanks to our always awake producer Marcel, our sound and editing wizards, Ben and Louis, and of course, to all of our listeners.

We're on LinkedIn and X, Dave Chapman, Rob Kernahan, and Sjoukje Zaal. Feel free to follow or connect with us and please get in touch if you have any comments or ideas for the show. And of course, if you haven't already done that, rate and subscribe to our podcast.

See you in another reality next week.[00:46:00]

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