Managing an AI Project

0:00:05.5 Announcer: From the Washington DC chapter of the Project Management Institute, this is PM Point of View, the podcast that looks at project management from all the angles. Here's your host, Kendall Lott.

0:00:15.7 Kendall Lott: Hello, hello, PMs. This is not our winter of discontent. This is December 2022 and it's very much our content time and happiness all around. We have an actually different type of approach to our PM Point of View today. We are gonna continue to elevate the conversation, Mike and I. How are you doing, Mike? You there?

0:00:34.5 Mike: Hey, Kendall. Good morning.

0:00:36.6 KL: Mike is here because we have two special guests who are coming to us from Cognilytica, who are running a podcast AI Today. So you get to hear this twice. You clicked the PDU on our side though. I guess there's a bonus for that. So we have with us today, Ron Schmelzer and Kathleen Walch of Cognilytica, partners both.

0:00:55.9 Ron Schmelzer: Mm-hmm.

0:00:56.3 Kathleen Walch: I think so.

0:00:56.6 KL: Yes, indeedy. Yes, indeedy. Ron, tell us about yourself real quick, and actually let's start with where you calling in from.

0:01:01.8 RS: Okay, great. Well, hey. Thank you for having us on the PM Point of View podcast. You guys are fantastic. We love talking to other podcasters. We kind of know how the shtick goes, but I think most importantly we have our communities. And our community that we have spent the last five years now, something like 300-plus episodes at AI Today podcast has been focused on artificial intelligence and that hot space and, of course, what's happening there with data. And our perspective and our point of view is always on what's happening with AI today because there's a lot of talk about the future. AI is so science fiction-y, and of course a lot of the past 'cause AI has been with us as long as computing, over 70-plus years. But we're focused on the trials and tribulations of making AI work, some of the successes and a lot of the failures. And that's my perspective. So I'm Ron Schmelzer, managing partner and co-host and of course my partner Kathleen as well.

0:01:56.5 KW: Yes. Hi everybody. I'm Kathleen Walch. I'm also a managing partner at Cognilytica and co-host of AI Today podcast. So as Ron mentioned, we've been running our podcast now since 2017, and we've never run out of things to say. We've wanted to focus it on AI today rather than AI of the future. Some podcasts are very forward-thinking. What's interesting about AI, too, is that with other technologies, it can be very mundane. A lot of people don't fear the cloud or fear mobile, but for AI for some reason it's very science fiction. People think crazy thoughts.

0:02:28.8 Mike: Kill the robots.

0:02:30.1 KW: Exactly. I don't think Hollywood helps to get rid of any of those thoughts. They just

make it worse. So a lot of people have, maybe, misconceptions of what AI is and what AI isn't 'cause some of the stuff that AI is doing right now and specifically machine learning is very mundane but incredibly useful. So that's what we wanted to highlight on AI today, how it's being applied, how different organizations are doing it, how it's impacting your everyday life, maybe in ways that you don't know.

0:03:00.0 KL: Well, so we're not AI... We're not in the land of science fiction. We're in the land of science factual, so let's start with that. So that's the real reality that you guys have grounded us in. Tell us a little bit about Cognilytica, though, in its context of maybe less the sales pitch and more why AI, what do you engage with? And I think I understand what you're doing on the podcast, but tell me what it happens from a corporate perspective.

0:03:19.7 RS: Yeah. What we have always focused on Cognilytica has really been around education and training mainly because there is still a significant gap in understanding not just honestly a lot of the artificial concepts, some of which are pretty hard to understand technically, but a lot of which they continue to evolve. We don't know how the brain works. We don't know what intelligence is, so therefore doing artificial intelligence is one of those things where we're constantly trying to figure it out, sometimes getting closer, maybe, maybe not. We'll see. Nobody really knows how close we are. So really, we have always been focused on education, and for a while also we've really spent some time focusing on tracking the markets in that traditional analyst style, what's happening with the vendor space.

0:04:02.6 RS: But what we heard is that it's really hard for companies to even think about procurement or buying when they haven't quite figured out what their problem they're trying to solve. And of course, this brings us to a much more recent concern, although we've been focusing on this for the past few years, which is around methods and methodology. And I think AI people are learning very quickly that it's not what you do, it's the way that you do it. I won't sing too much Louis Armstrong for you, but you guys know the story, right? It's actually much more about project management than it is about technology. I don't know, Kathleen, you wanted to add to that. [chuckle]

0:04:37.4 KW: Yeah. And I think that the more that we get involved in how these different organizations are doing it. Also, we have a failure series that we have on our podcast, Common Reasons Why AI Projects Fail. And digging into that has been incredibly helpful for both our listeners and us as well because a lot of people are failing, and they shouldn't be failing. And what we found is that it really comes down to how you're running your projects, and that they don't have a step-by-step process that they're following. They're doing it on the fly. They're not following anything at all. Different departments and groups within each organization are running things differently. And we're like, "These are some fundamental challenges that many organizations have. So as Ron mentioned, that's why we're all about education. We wanna share that with others and say, "You're not alone," and maybe take one step back. A lot of people also think their problems are unique to them.

0:05:28.3 KW: We've seen that a lot, especially in this AI space, and they go, "Well, my problem is different. My problem is unique." I'm like, "Not really." And maybe your topic area is specific, but if you take one step back and you say, "All right, this is my problem. There's other similar problems." You can learn a lot.

0:05:47.4 Mike: In fact, let me key on that, Kathleen, right away, 'cause you talked about methods, methodologies, following a process or no process, but I often also find that we follow a process mechanistically. And we go through the motions and we check the checkbox from whatever the scrum guide told us to do when the problem we're trying to solve might not lend itself to that. Do you see that as well with AI? You must.

0:06:09.5 RS: Yeah.

0:06:09.9 KW: Yes, but I was gonna say, people aren't even really following processes. They're just doing it. AI projects are really all about data. They're data projects. You need to make sure that you have the data, you have access to the data. It's good, clean data. Maybe it needs to be labeled if you're doing supervised learning. And people are just jumping forward. And they wanna move forward with these projects, and they're not... We are advocates of the CPMAI methodology, the Cognitive Project Management for AI methodology, and phase one is business understanding. Are you solving a real problem? For some reason when people talk about AI they're like, "We're just gonna go ahead and do it." [laughter] But is AI even the right solution to your problem?

0:06:50.4 Mike: Well, I'll go further and say that methods themselves are solutions, and if you start by saying, "Well, here's the method I use," you're saying, "Here's the solution I embrace." But we haven't yet talked about the problem, so same kind of pattern, right? [chuckle]

0:07:03.7 RS: It's really strange because when we do our failure series, these aren't like small failures from companies you may never heard of, like Jones Bank implemented some filing system you never heard of and that failed, oh, boo-hoo. No, no. This is like Walmart.

0:07:16.6 Mike: Watson, right?

0:07:17.8 RS: Watson, huge failure, billions and billions of dollars. They threw that whole healthcare thing out the window. That whole thing collapsed. Pretty much everything that's happening with autonomous vehicles. You might have seen Embark, semi-truck. They just completely shut down. But even companies that are not startups, they're established companies. Like Walmart had their inventory scanning shelf bot they spent millions of dollars on and they're like, "Okay, that didn't work." Who came up with the idea of the inventory scanning robot? Phase one, business understanding. Tell me what the problem was. And you might think, there's no way organizations like this make them stick. It's like, "No, no, they are like...

0:07:53.2 Mike: Worse.

0:07:54.3 RS: They're buying into, I don't know if it's fear of missing out. I don't know if it's getting onto the next hype cycle. There's a lot of reasons for it, but it's not exactly the same as other places where you might say, "Okay, jumping into a cloud project, perhaps too early or doing some mobile stuff that didn't work out." You can iterate your way to success even with those failures. But for some of these, it's like when they're out, they are like out.

0:08:21.8 Mike: You just made me think of something. This whole theme we're talking about to start our session today is really not knowing what we're doing, and we're groping our way in the dark when we have a light switch. So it's kind of like saying, "If we're already starting out with a lack of intelligence, then artificial intelligence is almost an oxymoron." Right?

0:08:38.7 RS: Yeah. And I think we've spent a lot of our time, especially in our education, when we started bringing in methodology and process into the whole conversation, what we realized is that intelligence is not the problem we're trying to solve because that's not really a problem. It's more like, What are you trying to accomplish if you have the ability to do things with a little bit of human cognition? And you think, There is a lot of work on this, but there's three aspects of what we mean by human cognition. It's perception, planning, and prediction, which is that understanding the world around you. So it's things like natural language processing, computer vision, there's a whole category of tasks there. Then there's basically planning, which has to do with things like predictive analytics and doing some routes, you might think of playing games, whatever the thing is, trying to figure out what the next thing is. And then there's prediction, which is trying to guess what the next thing is gonna happen.

0:09:28.7 RS: And so when you do that you could say, Okay, well, if we're trying to apply honestly, what's called narrow forms of AI to some of those problems, then you could say, Okay, instead of... For example, if we were back at Walmart we'd be like, "What is the problem you're trying to solve?" "Oh, we need to scan our shelves and the problem is stuff is mis-shelved all the time, and we're spending all this labor with people moving things around, and we don't really know the status of our inventory." We're like, "Okay, forget the robot for a second, okay? You don't need the robot. What if you just had a push cart with a little camera on it? And all it did was just tell you using basic computer vision what the products were on the shelf, and you basically clicked a button that said, yes?"

0:10:08.7 RS: Okay, it's not autonomous. It doesn't navigate the floors by itself. You don't have to solve problems of it running into things. All those problems, let's not deal with those very hard, by the way, very classically hard problems to solve. Even autonomous vehicles can't figure that stuff out. And just focus on the problem you're trying to solve. Break this cognition problem down. This comes down to, again, thinking in terms of, it's a process, it's a method.

0:10:32.3 KL: Let me in here for a second, and we've gone down this part of how do we project manage an AI project, right? The implementation of some sort of AI information. I'm gonna wanna shift that a little bit later for us, but for this right now, it's heartwarming for me to find out that even with this more modern toolset you have all the same project management failures, problems, concerns, misconceptions that we do in the point of view from a project manager. So let's take it now as, how many podcasts have we had on this, essentially, Mike? All project management problems are know the business problem first and work to the value. All the rest of it is noise or stuff that's already understood or is not standard enough to bother to use a standard process.

0:11:09.6 Mike: It's not noise, but signal. It's just a very wrong signal.

0:11:12.7 KL: Wrong signals, right. So let's think about some of our project management aspects. Let's say you got your business problem. Mike, we last talked about the difference of understanding how to break down the project you were trying to implement versus develop it as a sequenced flow as a way of understanding the breakdown of the scope of the project. What do you guys observe in the implementation of AI tools, and why would it be any different? Perhaps maybe it's not, but what have you observed from your market look? Once people do have a business problem, what are you observing?

0:11:39.5 KW: So for us, the way that it starts is first we have business understanding, and we say, "Make sure you're solving a problem. Okay. Then make sure that you understand... We call AI machine learning also cognitive technology. Sometimes AI can turn people on or off, depending. So is it a cognitive technology solution? If it is, then next is data understanding. Do you have the data that you need? If not, how are you going to get that data? Do you need to have access internally? Do you need to get this data externally somewhere? So let's start there. Then let's make sure that our data is good. Once it's good, then we can do things to it, and now we can move forward with actually building the model. And then we're going to test the model, and then we're going to actually use the model in the real world.

0:12:28.9 KL: Oh, I'm gonna hold you right there. That's super chilling that it's as simple as that or as problematic as that because Mike, that just took me back 20 years when we used to talk about data cleansing. And it was like the big deal when we were merging databases back in the '90s that, "Oh the databases don't speak to each other and the data is wrong." Like, have we just gone back to the future or what's happened here?

0:12:50.4 KW: Yeah. You too, right? Ron and I laugh about this all the time because sometimes a new technology, a new way of doing things will come out and Ron's like, "Yeah, wasn't that called this like 10 years ago? Wasn't that called this 20 years ago?" And we laugh about it 'cause we're like, "Yeah, it is." It's just, they spin it a new way and now people get so excited. You're in this hype cycle again. You're like, Oh my goodness, this is something new. I'm gonna invest in this. We're gonna go crazy. We're gonna like not think straight. It comes down to fundamental data problems. And I don't think that's something that's new, and I don't think, unfortunately, that's something that's going to really change anytime soon.

0:13:23.9 KW: The amount of data that we're creating on a daily basis is insane. Like we talk about being in the zettabyte era. I mean, first off, like actually how big a zettabyte is is crazy. It's huge. It's a huge amount of data. Some companies like Google have a zettabyte of data. So it's not just now the world, it's like one company has that much data. To be managing that data, depending on if it's streaming data, how fast it's coming in, there's just a lot of challenges, this idea of big data. And we have a lot of the V's of big data, so we have velocity, veracity, volume, that's the size of it, and that's what's making this so difficult. So it's not data and databases and that's the hard part. It's all this other data that we're creating.

0:14:10.3 KL: It's the pure scale and speed of it then. Okay.

0:14:12.8 Mike: So let me dive in on that because that makes sense, of course, and we've all seen this phenomenon for decades now. And we all have had experiences either with cars getting smarter and helping us stay in the right lane and forget even self-driving yet. But autopilot software for pilots and airplanes has existed for a long time, and all this stuff's been around a while. But fundamentally the more volume we have, don't we have a bigger management problem?

0:14:39.7 RS: Oh, absolutely.

0:14:40.1 Mike: Is it not like exponential? Like if I double the amount of data, haven't I tripled the management challenge?

0:14:45.1 RS: Actually it literally is exponential. There's these charts. I don't know if you've seen

these, the growth-of-data charts, both structured and unstructured data. Structured data, of course, and databases, that's actually growing at a fairly linear rate. But like it's the unstructured stuff. Every system we build collects data. And the data systems we build, we put more data on top of those systems to do additional things like analytics and logging. So what happens is that every single time we pull this in, we just explode this like exponentially without limit. I mean, that's why people have said... We hate this analogy that data is the new oil. Like data is not the new oil 'cause oil has got a limit. Data has got no limit. I mean, it's probably the only infinite resource that I can think of.

0:15:26.3 Mike: And if we're making the management challenge exponentially harder, then it stands to reason that we're probably getting worse and worse at it.

0:15:33.4 RS: Yeah. And for those people who don't know, listeners, unstructured data are things like documents and images and video and text and all that stuff and...

0:15:41.4 Mike: Even Google searches, right?

0:15:43.4 RS: Yeah, searches, all that. And we're trying to make more of it because that's actually where a lot of the value that we have. It's not sitting in a database nice and pretty.

0:15:51.0 KL: Let me back up for a second, though, because that's a whole realm to go into. But just before we tip into it, does that change the project management concept? So that strikes me as the thing we are trying to implement may be fundamentally different than other things that have been implemented in the world because of the data streams. But is the project management any different with it?

0:16:10.9 RS: That's one of the things we spent some time talking about, trying to understand. Just first of all, these things should have well-defined beginnings and ends or however you wanna define the end of a project, but they should be well-defined projects. And that's when people get sort of out of control because when you try to bite off too much, especially with data, and there's some very notable failures. I've mentioned some of them, but even some of the smartest people in the world, the best AI researchers are just failing, whether it's Andrew Ng, who is one of the progenitors of this idea of deep learning, and they tried to basically do these medical imagery things with automatic scanning and they just could not get it to work. Founder of Coursera as well, Andrew Ng.

0:16:51.2 RS: Other people like Yann LeCun, who is another major AI person, they've been pushing all this stuff out of Facebook and Meta and it's been failing. And of course, the biggest one now is Amazon might actually close the whole Alexa department because they never figured out how to turn that into a business, which is a whole other story. But that comes down to, "What are we trying to do here?"

0:17:11.3 KL: You just said something that triggered, for me, something different that might make it. When we think of... I wanna go back to your pathway to getting through an AI project, but we got business problem in the data question. But something that might be fundamentally different here is this. Mike and I have wrestled with people and discussing before, get your business problem, right? Because that's the goal. How do you know you're getting there? Mike talks a lot about being able to produce the portfolio of projects that get us to our outcomes. Each project has to have its own goal, and that's part of a portfolio that achieves business problems and gain business returns or

mission returns in the case of nonprofits and government space. We think of that, the image that you just gave me is we're always trying to get people and ourselves to think of, "What is the goal and stay on path and produce flow."

0:17:58.6 KL: What might be different here when you touch a project that has potentially, potentially infinitely expanding resources, I.e., the data, is not fundamentally constrained because project management is about constraints. So now instead of we need to have our constraints 'cause time keeps moving and we're aiming at a goal, the goal is no longer... Our business problem is no longer a goal, but the absolute constraint. Stop when you've solved this. Don't keep finding all the stuff you can do around this. It may be a different twist on the same problem, Mike, for us, that it's actually now more of a declaration of the endpoint than the target.

0:18:40.1 Mike: The endpoint, so you're distinguishing endpoint from target as an endpoint is something that should be pursued and sometimes we have the wrong target?

0:18:47.1 KL: Yeah, because what happens is is in a project we have to put energy in to get to something. We're building something. We're organizing people. We're communicating. We have meta information. We have... All the stuff we always talk about is energy inputed into a system that we keep the flywheel moving, and we need to be focused on the target. We need to be focused on the business problem that has an outcome and produce these things. In this case, you're touching a topic that explodes in terms of what you could be addressing. So yes, we're putting in our project management energy, but the thing that we are building against itself once you trigger it, could just keep flowing, can keep going, can become a terabyte to a petabyte to a zettabyte. I mean it just starts exploding beyond you.

0:19:28.6 KL: So now we still need that. You told us before we need to start with a business problem. And so I'm now thinking of it as less like, "I hope we can put enough energy to get to the business problem in time," to, "No, that means you have to only build this and stop because there's something inherently expansive in dealing with an AI project." This goes back to something deeper and deeper, yeah.

0:19:48.6 Mike: Ah, that's interesting. So scope creep on steroids, almost.

0:19:52.6 KL: Scope creep on steroids. This matters because one of the questions fundamentally in economics and I believe project management is a reflection of that is we are dealing with scarcity. We've anchored a nonprofit program around that that fundamentally project managers say, "Because you as a business problem are dealing in scarcity, we have to help you manage and stay on track." But what we're dealing with when you touch something in a deep data way the way you are, we're no longer dealing with... There's one element that is no longer in scarcity.

0:20:22.4 Mike: That's data.

0:20:23.0 KW: Right. Yeah. [chuckle] So...

0:20:26.0 Mike: And it can drain the resources of everything else...

0:20:27.7 RS: Right. It pulls everything down with it.

0:20:28.9 Mike: Making this.

0:20:29.8 RS: Exactly.

0:20:29.9 Mike: Yeah. And so the...

0:20:31.0 RS: Good Point…that's an interesting point. And a lot of times it does, right, Kathleen?

0:20:33.7 KW: Right. So we always say, "Think big, start small, and iterate often." So think big, have the end goal in mind, but then start small because when you take on more than you can actually handle you start to run into issues as well. We want these to be short, iterative cycles here. What we found is that a lot of companies are spending nine, 12, 18 months to get a model out. That is more of a waterfall approach than it is an agile one, and that's not how you should be building your AI and data projects. So when you start small we go, "What is the smallest thing that you can do in this cycle so that you can get something done?" And then continue to iterate often. That's another problem that we've seen that people are just taking on a lot more than they can handle, and then somebody in...

0:21:26.4 KW: Previous, I think actually somewhere we read it, it's this term wagile, and we bring it up a lot because it's waterfall and agile combined. And that's what a lot of people are doing. They wanna be agile, but they're not. And so they're running into these issues as well where they're like, "You shouldn't be taking 18 months to get a model out." That's way too long.

0:21:45.2 KL: Let me throw a word in for the traditional PM waterfall crowd. I would say iterative, we know always works well when you're actually not quite sure what the end solution should be. And we know there's things we don't know, and we need to experiment and learn as we go, right? But sometimes if you do it right and you have some very narrowly defined scope, a true minimum viable product that's very clear and right in front of you, the path to getting there is known. We can lay out the steps. We know the three work streams or whatever it is. Maybe you don't need to iterate more than once.

0:22:18.9 RS: It's possible. This actually goes back to actually what Kendall, what you were saying about the potential for this explosive exponential rate of growth. I wanna bring this into a very specific case in point here. Even for a very basic thing, let's just say you're trying to do some image recognition thing or some predictive analytics thing and you're thinking, "Oh, it's a very well-defined scope. I'm just gonna take pictures of something and categorize it." And you might think, "Well, I have a lot of data. I could possibly have petabytes of data." So there's the temptation to basically say, "Okay more is better. So I'm gonna go with all that data, and I'm gonna use that to build the best model." The problem is you didn't take into account all the other stuff you've gotta do. It's not just the data.

0:22:58.1 RS: You have to clean the data. You have to label the data. You have to integrate the data. Oh, and by the way, the data is changing every five minutes. So what's happening is that you just, you thought, "Okay, I have a well-defined scope." I'm like, "Yeah, but you just bit off this big data problem, and now what's happening is that your project that you thought was gonna be X amount of months," you're like, "Oh, we didn't realize we needed to do all this cleansing. We needed to do data labeling. I gotta outsource this. I gotta do this." And then it's like you gotta iterate, you gotta build the models. Yeah, you just killed your project. You just basically exploded

your project. What you should have done was basically started with a more basic model, some more basic data, maybe not try to bite off all that sort of stuff. Don't try to build the Uber chat bot that can handle 25 questions. Handle one question, don't do use learning. That kind of thing.

0:23:41.2 KL: I wanna link this to you, Mike, for a second. Help me out here. You've talked in your past with me about how traditional methods are schedule buffers, but agile is a scope buffer.

0:23:52.0 Mike: Yeah.

0:23:52.5 KL: I was just reflecting on that not with the deep knowledge that you have. When he just talked about this as explosive scope, I'm suddenly realizing if this were using an agile approach, this could be a way to never end.

0:24:04.1 Mike: And that of course is the knock-on, applying these... A scrum or agile method that...

0:24:08.4 KL: This could be a million minimally viable products after another.

0:24:12.1 Mike: Well, really any project using any method. If you don't have the end in mind and it's not clear, then it will go forever. What's the old saying from I think it's an Alice in Wonderland quote. "If you don't know where you're going, then any road will get you there."

0:24:24.5 RS: It's important point for the listeners who are thinking about AI, who don't have a lot of experience, just think about autonomous vehicles. How long will it take for us to get a level-five, truly autonomous vehicle? The answer is nobody knows. So the question is, "Are you willing to put in basically limitless amounts of money and time into this problem? And at what point do you either consider the problem solved or unsolvable?" And there are AI researchers who say, "We're 200 years out from autonomous vehicles." There's some like, "No, no, no. We're five years out." Who's right? The answer is you don't know. So to your point, it's like, we could be a million iterative sprints away. We could be five, but the fact is nobody knows.

0:25:02.0 RS: So unless you are willing to basically just throw caution to the wind here. And the problem is that a lot of AI problems are like that. Whether it's trying to make bots that can handle any conversation, whether you're trying to do medical imaging, whether you're trying... There's so many classes of problems like that, that just might be hard to rein in and then if you do rein it in it becomes overly trivial. And you're like, "Well, I can do lane keeping." There's nothing wrong with lane keeping, but you don't need full autonomous vehicles to do lane keeping. And that might be good enough. So you have to tell people to stop. To your point, tell people, "Stop there." But the autonomous vehicle group doesn't wanna stop there.

0:25:44.7 KL: Once people have played to the data what are you dealing with? Where do you see the next step where people trip up, fail or are successful?

0:25:51.4 KW: So really, once we make sure we're understanding a business problem, we have our data, now we're going to actually build the model. We need to make sure that we are putting it in an environment where it's going to be most useful. So what I mean by that is we've seen people have cameras out in the wilderness to count the number of salmon that are coming down a stream. Well, if you're going to be out in the wilderness make sure that you're not going to need to be connected

to the Internet because you are not probably going to have any Internet connection, or if unlocking your phone with your face, make sure that you don't need to be connected to the Internet because if I'm in airplane mode, for example, or I'm out on a hike and I don't have good reception and I'm not able to do that, people will get frustrated.

0:26:40.7 KW: So you need to make sure you're understanding where you're actually going to have your model in use. That's another problem that we see. People aren't always thinking about that. And then they go, and they put their model. It's called operation wise, and you're like, "Okay, it doesn't actually work as I thought." Another issue is budgeting. You need to make sure that you have budgeted for this project, not just till the end, but afterwards as well. Because what happens is that we have data drift, which leads to model drift, which means that over time, our model will not perform as well. Are we retraining this model? How often are we retraining this model? Who's in charge of that? These are all questions you need to be considering.

0:27:18.8 KL: Kathleen make that a little more specific for us. What would it mean... What's a business example of how model drift happened?

0:27:24.9 KW: Okay, sure. So depending on how often you get different data, let's talk about sales data, for example. You're getting it in. It's performing one way, and you're like, "Okay, I've built this model so that it's going to help with answering a specific question or help with predicting inventory." And then suddenly something happens and it's a sudden change and your model is no longer performing as well as you thought it would for whatever reason. If you're not retraining that model, which means giving it new data that it's never seen before, real-world data, making sure it's continuing to understand what's going on, it's not going to perform as well because AI is not deterministic, which means it's going to have the same exact result every single time. It's probabilistic.

0:28:10.5 KW: And so with probabilistic systems you're never going to have 100% accuracy. So you need to make sure that you're constantly evaluating it. What we found is that people will give an upfront cost to the project and say, "We've budgeted $5 million for this." The project, you're done. You've built your model. You've operationalized it. It's being used, and you're going to move on to the next project. And we say, "No, you have to budget for maintenance of that. So that means you have to have a person involved, at least one, depending on how you set it up at your organization, maybe more than one. You're going to have continuous budget for this retraining. You're going to have to make sure that you have some sort of schedule of how often you're retraining it really."

0:28:54.3 KL: Are we hitting the difference between a project and product management here? I mean, is the project once you get the model built the first time? Is this the definition of when project ends?

0:29:02.7 Mike: Everything Kathleen just described is a problem with project management and has been for a long time, this notion of we buy into what I believe is a weak definition of projects as temporary endeavors. The investment period is temporary. The payback period is the reason we do the investment period. So if we short circuit the payback period by walking away and not giving it the full squeeze to get as much juice as we can out of it, shame on us.

0:29:30.1 RS: Right. And actually, it's kind of interesting. So much of what you're talking about

just really gets me thinking here. By the way Kendall, when you were talking about we need this area of meta learning for meta project, that's actually one of the classically difficult problems of computer science, as you know the P versus NP problem. I don't wanna over-summarize it, but if you go to... Wikipedia does a good job, which is that there's this classical problem, it's called a major unsolved problem where, can you figure out if a solution can be solved in computing time? And the answer is we don't know if we could figure out if something can be solved in any sort of computable amount of time. That's a classically unsolved problem to first do some analysis to figure out if a problem is solvable in that way. If you could solve it there may be a Fields Medal and Nobel prize, all sorts of stuff waiting for you on that one.

0:30:15.6 RS: But to your point here about the project being done, and I wanna go to something you talked about really much earlier, Michael, that's basically about when you said about autopilots and planes. We've had autopilots for a long time, which is like, "Yeah, of course." Because if you think about it, if you're piloting a commercial plane or any plane you don't wanna be literally sitting at the controls the whole flight, especially if it's like eight hours, whoever knows how long. You get fatigued, right? You're like, "Why can't you just do what we have in our cars, cruise control?" Which I always think about as the car version of autopilot? It's not smart. It just goes, "Fly at this altitude, at this speed, for this amount of time, make sure stuff doesn't go crazy." It's a little more sophisticated than cruise control, I'm sure, in our car, but it does that.

0:30:56.4 RS: The problem is when you build that, you can have some level of confidence that there's some maintenance that's required, but it's not handling all sorts of these unknowns. Whereas if I had an autonomous flying solution, which is not like autopilot, takes off, lands, and I can literally just click the button. If I said, "I built that autopilot in 2017, and we haven't updated it since," a lot of people would be like, "Ooh, that feels risky," Whereas with autopilot, you're like "We built this autopilot for our Boeing 737 MAX 8." We won't get into that one, what with the problem with autopilot in that plane. But there's a little more confidence in that because this comes to something we talk about, which is augmented intelligence versus artificial intelligence. And this is the idea that the most valuable things that we can be doing with these cognitive systems is really just helping the person either offload some cognitive task, which would otherwise take a lot of their time, but they're still fundamentally in control versus these solutions that try to shift control onto something else, which is actually much higher risk and much more complicated and involves all this stuff.

0:32:03.6 KL: I've got two places I wanna go with this. So Mike, in the context of thinking of our last podcast even and many before it, but where we really got into business problem value, but we look at it as this idea of the product flow as a different way of understanding your project. It was just a project management. It was a little geek-speak project management drill we were doing, with the guys. When you reflect on your own a Claim model and things, Mike, what do you see in here that might be different? I saw the one of expanding scope due to touching a data flow that becomes expansive, but what are you seeing in here that might be different from the other project management that we face in terms of implementing an AI project?

0:32:40.2 Mike: No hard conclusions, but definitely some things running around my brain that I wanna ask further of Ron and Kathleen here.

0:32:45.3 KL: Yeah, no doubt.

0:32:47.4 Mike: So because like a lot of science fiction movies where we design these great robots and then suddenly the robots take over someday or all the things that can go horribly wrong. But at a real practical level, even something like an autonomous vehicle, which I think can be demonstrably shown now that whether it's driver-assisted or the machine takes over that it can drive or generate a more accident-free world, that artificial intelligence can avoid a lot of the mistakes we humans make. And even things like driving while under the influence of alcohol, machines can't do that. Fatigue question where pilots in airplanes can reduce the cognitive load on them and thus the fatiguing effect. But back to the science fiction example, I'm wondering if a driver of a truck gets a virus, in fact, even if he gets some of his fellow drivers sick at the truck stop, that's bad, but if the AI software inside the vehicle gets a virus, that could infect all the vehicles that have that software.

[overlapping conversation]

0:33:46.4 Mike: It offers real risks. Say it's a huge project management problem because if I'm not aware of that particular risk, oh man.

0:33:54.9 KL: The question is, is that risk profile fundamentally different or in fact much worse?

0:34:00.1 Mike: That's kind of my question, I guess. It seems like it's worse, but please steer me in the right direction guys.

0:34:03.9 RS: Well, we actually have a whole series on ethical and responsible AI because what you're talking about touches on some of those concerns. There's actually many levels to this. There's the idea of humans trusting machines, and there's of course humans trusting humans, which is actually we see as the much more immediate issue, which is people just doing bad things with autonomous or automated machines. We're already seeing what's happening in Ukraine, right? We're now in a new area of warfare. Everything is drone-based. Of course they're human-operated, but you're already starting to see it's like, "Well, we can do a little automated stuff here, GPS navigation, camera detection, do a little computer vision. What could go wrong?" We've seen that movie. But there's a lot of issues that are not even specific to AI because we're so dependent on data in general for a lot of our systems.

0:34:47.1 RS: So many cybersecurity risks around data theft, data tainting, people using systems, misusing systems and our trust of those systems. Someone could basically be hacking into GPS systems and making things navigate the wrong way. People do that. GPS spoofing is a real thing, and there's many, many other threats. The reason why I don't worry too much about... It's kind of this weird... It's hard to hold two thoughts in your head at the same time, which is this idea that machines will take over and at the same time that Amazon can't figure out how to monetize Alexa. 'Cause I'm thinking, "If machines were that smart we'd be using Alexa all the time because it would be so awesome, but we're not using it because it's not that useful. But if it's not that useful, then how can these machines take over because then they're not that useful." And the answer is, "Yeah, they're not."

0:35:35.5 KL: That's what the machines want you to believe.

0:35:36.6 RS: They've got me fooled. So you go down the right path of thinking, which has to do with... We actually have these multiple... There's multiple levels of this or layers of this ethical and responsible AI, which has to do with transparency into systems, human accountability for machines.

There's so many things that have already honestly gone wrong. I mean, the thing that we point to the most egregious of this is if you post something onto Google or YouTube or Facebook and they use one of their algorithms and their algorithms, which aren't even that sophisticated, their content-moderation things, and they just decide that your account is...

0:36:13.8 KW: Blocked?

0:36:14.1 RS: For whatever reason, then your account will get terminated. This is today. And you have zero recourse. There's no one to email because what they've done is they've made the decision that they will fully trust the algorithm.

0:36:27.3 Mike: Yeah, the human is out of the loop. Yeah.

0:36:28.5 RS: And that to me is the most concerning because that could be applied to payment systems. One day you might find bank account, bam, completely delegated to the algorithm with no recourse. It could be anything. So this is to us the bigger danger. To me, it's not the machines taking over. It's that people may be trusting algorithms too much in decision-making and then taking the human out of the loop for economic reasons.

0:36:55.7 KL: I love this because to me, what you just described is DMV on steroids. It's how we go and engage with bureaucracy, which just got me to think, just make a leap. The algorithm we have spent 200 years building is called bureaucracy. There's this algorithm that we trust. And I know all my clients are federal government. So it starts with Congress and the President, and then somewhere out in the field a rabbit gets counted somewhere in a forest. And so something happens in there and we show up and get our social security checks. We go and get our DMV, we get our passports, all these services that we get, our healthcare and all these things, that was the algorithm. And we know how frustrated we are when someone says to you at the window, "Next, you filled out the wrong form, go back and stand in that line. No, I don't know why your account's been blocked." I mean, it's just this endless loop with humans.

0:37:46.6 Mike: We can't do that. That's against our policy. Right?

0:37:49.0 KL: Well, it's the policy and the structure of the organization that's been the algorithm that we've spent basically Victorian era for and the bureaucratic world forward trying to deal with. So now we may be putting it into the machine loop and it's going to be the same fears and frustrations all over again. So anyway, let me go to my next question that I had on this. So we just flagged that risk might be fundamentally different in a project like this. In your experience guys, what is the smallest application that you have seen where someone has successfully rolled it out?

0:38:16.5 KW: I'll talk about some of the small ones. So if you need... Any time that you're going to keep the human in the loop too, it can be a little bit smaller. It doesn't need to be as accurate. We talked about autonomous where the goal of that is to remove the human from the loop. That needs to be pretty accurate. I mean, you think about a car, if you're gonna fully remove me from the loop, it's scary. You better be darn near accurate. We've seen recommendation systems. So that can be small and you're just recommending different products. You can implement that fairly quickly. We've also seen some image recognition where it's just identifying small things in an image. Also, a lot of automation style, which automation, we always say is not intelligence, but we've seen a lot of people do automation and that can be really fast, especially, how that quick ROI return on

investment. And then another thing that we've talked about is when we always say think big but start small. So if you are building a chat bot, for example, you're gonna use natural language processing. Think about the question that gets asked the most and how you can relieve maybe call center volume or just volume on your site and address that specific question.

0:39:25.6 KW: So the US Postal Service put together a chat bot and they said the biggest question that they get asked is tracking a package. So that's what the bot answered. Not any of the other questions, just that. So start small and then you can really see a return.

0:39:40.3 KL: That was really start-sensitive. What is it that most people are asking you about? I like that. What is the question you get asked the most? It's defining the problem that way. Cool. Thank you. I'm sorry. Go ahead, Ron.

0:39:49.4 RS: No, no, that's perfect. To continue, one of the interesting things we've seen even with automation, very basic automation, there's a term called robotic process automation, which your listeners may or may not know about. Unfortunately, that term is... They use the term robotic, which is unfortunate, but it's really basically automating a lot of the human activities like cutting and pasting and scraping and going into emails. It's like you can kick off like a little software bot that will do these activities, usually on behalf of call center agents so that when they're on the phone with you they don't have to open up multiple systems or automated systems that may take inbound emails and automatically do things.

0:40:23.0 RS: And it does require like a little bit of natural language processing, which is an aspect of artificial intelligence, one of the... We call it seven patterns of AI, the conversational pattern. And this is a very basic thing. But what we say is you have to separate for a lot of people that are in the customer support roles or those roles. You have to separate what we call their work from their job because their job is customer support, but they're spending like two or three hours a day putting things into systems, taking things out of systems.

0:40:53.6 RS: I think we all know the attitude of salespeople. They're like, they wanna sell. They don't wanna do data entry into CRM systems. But they're like... And as you know, the other mantra is you can't manage what you don't measure. So you have a bunch of salespeople who are basically spending half of their time not doing sales, doing data entry and doing reporting and doing this stuff to make the other people know that they're selling, which is crazy. So people have been up starting to apply like, "Oh, this is actually not a bad application where the system might listen on the phone call, automatically do logging, automatically do the entries." It knows your calendar, so it automatically puts the entries into the CRM systems and knows how long you spent on the call. It can even do a little bit of call analytics to know if the person was there, if there's like a next step. It doesn't even have to be crazy. Or like taking inbound email and doing things, basic things like accounts payable, which is a total disaster in most larger organizations. They have to spend their time separating invoices from contracts, from other random email in a PDF system so they can enter it into their ERP system.

0:41:52.7 RS: We're like, "Why are our accounts payable people spending their time literally duplicating stuff from a PDF or an invoice into an ERP system?" And so this is a great activity for an automated software bot. These companies have been growing like crazy lately. They'll just listen to that inbox and you just create this little flow. You can even record yourself doing it with a screen recorder and it'll automatically take the stuff out of the PDF and put it in there. And then you're only

handling the exceptions when stuff doesn't work.

0:42:22.6 KL: I'm listening to you and I'm thinking about what the next topic here for us would be. But having said that, let me go back to what you just said where you talked about the smallest examples, asking the right questions, solving the business problem, and then you just walked us over to RPA. What I wanted to know is, what do we actually mean by the application of artificial intelligence? What is it doing that we weren't doing anyway, particularly when you talked about workflow?

0:42:49.4 KW: So when we talk about artificial intelligence, we break it down into the seven patterns of AI. Because what happens is when you say AI and I say AI, I can be talking about autonomous vehicles, you can be talking about AI-enabled chatbots, Ron can be talking about a predictive maintenance system. They're all under that umbrella of AI, but they're...

0:43:08.8 KL: I'm fascinated. What are the seven?

0:43:09.6 KW: Perfect. So because they're all different, and so it means that you're gonna have different data that's required, maybe different members on your team, maybe also the project will look a little bit different, different algorithms will be selected. So you need to understand what it is that you're trying to solve. And so in no particular order, the first one is hyper-personalization. So this is treating each individual as an individual, no longer am I bucketing you into groups and categories. You think about this a lot with advertising. This is an advertiser's dream. But you can also have hyper-personalized healthcare, hyper-personalized finance. Everybody looks a little different. Maybe Ron and I have the exact same credit score, but we spend our money very differently and we invest our money differently and we have different goals.

0:43:55.6 KW: Maybe Ron has 10 kids. He doesn't. We both have two. But if he had 10 kids and I had two, maybe his goals of college are gonna look a lot different than my goals of college if we don't have the same number of kids. Then we have conversational systems. So this is machines talking to humans and humans talking to machines and then humans to humans, so machine translation, in here falls natural language processing and all that AI-enabled chatbots. Then we have the autonomous system. So the goal here is to remove the human from the loop. That's obviously incredibly difficult and the hardest pattern of AI.

0:44:28.9 KW: We have predictive analytics. So this is helping humans make better predictions. We're keeping the human in the loop here. We have patterns and anomalies. So this is where we are looking at data and finding patterns in that data, looking for outliers, think about fraud detection here. That's a really great use case for that. And then we also have goal-driven systems. So this really is around reinforcement learning and trying to find the most optimal path through to the end goal. And so we've seen this with warehouses, for example, where we've removed humans and now we can navigate through warehouses with bots a lot easier. And then the last pattern, again, in no particular ranking, is the recognition pattern. So this is making sense of all of that unstructured data that we had talked about it's emails and audio files and images, anything that's most of the data that we're creating today, anything that's not kind of nice has scheme.

0:45:26.1 KL: Is this what you teach when people come to you and you're looking at, I guess, some sort of certification is to think and learn about how they can see these applications in their own business problems? Is that the focus of this kind of education?

0:45:36.9 RS: Yeah. I mean, just to a very large extent. It's also on breaking down some of these harder problems, also understanding 'cause sometimes people are very tempted to skip certain aspects of the process. Intel actually introduced this idea called the AI Go/No-Go. We like to think of it as a series of nine traffic lights in a one-road town and you really can't start your AI project unless all those traffic lights are green and yellow doesn't count or amber for our UK listeners here. But that's basically this idea that you have to have the three traffic lights of business, is the business willing to invest? Is there a well-defined need? Those kinds of things, is the business willing to change? And then the next one is the technological barriers, which have a lot to do with, Do you have the data? Do you have the capabilities to do it? That sort of stuff.

0:46:25.4 RS: Then the third one is, can you even use the model where you want to use the model and aspects of those things? And the funny thing is that we find that a lot of times the projects that tend to go off the rails are the ones where either there's clearly red lights, but they're kind of gonna go ahead anyways. Or where there's like this uncertainty where you're like, "I'm not sure if we have the data." We're like, "Well, maybe the pre-project... You're gonna think of this like the first project before your project should be the project to figure out if you have that data, what that looks like." And you might be like, "Oh my goodness, I didn't realize you've got all these problems." And then you're like, "Okay, now you're aware of the risks inherent in the next project... "

0:47:01.8 KL: Left of charter.

0:47:02.0 RS: Yeah, exactly. So we do spend a lot of time in that. We actually do spend a lot of time on concepts and fundamentals, basic education, AI and machine learning, which is perfectly reasonable to expect. And honestly, we're spending a lot more time even on basic data education. A lot of things you were talking about that we've been talking about for decades, people still need to learn about data integration, data cleansing, data preparation, data transformation. I don't think that's ever gonna go away, which might be a good thing.

0:47:30.5 Mike: All of what you guys have shared with us today may hit me that most of those seven, if not all of the seven types of AI or categories can drive another big risk to any AI project, which is the risk of what happens when we scale it. So if you think 10 or 15 years ago, Toyota had a big problem where something like 0.01% of its cars had a major break failure, but they sell millions and millions of cars. And so there were hundreds and hundreds of people, and I don't have the math perfect there, so don't quote me, but many, many cars were having break failures and unfortunately some even ended in fatal accidents. And so if I was only selling 100 cars and I had a 0.1% failure, I might not have a single failure in those 100. And at most I'll have one maybe and maybe that's manageable. But it strikes me that as we scale AI, which is of course one of its big advantages, the scaling potential, the potential of incurring that risk that when we were a startup and a scale-up ourselves was no big deal, but now that we're dealing in the millions or billions or trillions of scale size, one small mistake, doesn't even have to be a virus or anything malicious, just one little bug could really wreak havoc. So I'd love to get your guys' take on that.

0:48:42.6 RS: That's absolutely true. And sometimes it's easy to see kind of what the potential issues could be at scale, especially some of these harder problems and trying to make some of these harder things work. But sometimes it's really difficult to see that. And so one of the things that we sort of built out about two years ago was this idea of you need some sort of ethical AI framework or a trustworthy AI, which is more about the human side than it is about the machine side. And we

didn't create this entirely out of scratch. We looked at... There were all these existing ethical AI frameworks that different organizations were creating. None of them were particularly comprehensive. Some really focused on data privacy. Some focused on keeping the human in the loop. Some focused on malicious actors. And we said, "Well, let's just combine them all together, rationalize them in some sort of way, and then create the sort of structure."

0:49:34.2 RS: And what an organization needs to do is to say, "Assume that your AI, something will go wrong. Assume that your AI systems will go wrong or someone's gonna come in and hack your system or... " So the question is, What are the processes and procedures you'll put into place to be aware of it, hopefully beforehand, and then manage that sort of risk process so that... We figured that out with cars, with the whole recall process, right? That recall process... And even in medicine we figured that, the whole pandemic when people report some sort of illness that can possibly be contagious, there's a system by which we can detect that. Because if we didn't we'd be surprised, one day we're like, "Wow, a whole lot of people are dying." It's like, yeah, there's a pandemic. Not having any awareness of it is part of the problem. Of course, issues and methods for dealing with containment, some of which might be highly controversial. But in the case of AI systems, that's I think the biggest thing that organizations are really... That are putting together technology are missing. Either it's... Sometimes it's just they're not sure, they're experimenting, so they don't really know what can go wrong.

0:50:37.8 RS: When we do the ethical and responsible AI framework, we do the same thing we do in our failure series, which is that we do the rip from the headlines. We're like, "Here's what happened. Amazon rolled out their AI system for hiring and sure enough it was denying all these women. What could go wrong?" And of course, they had to shut that thing off. And if you think about it, we understand the motivations. They're not trying to play research games here. Amazon for their warehouses, they hire literally thousands and thousands of people every month and they have to evaluate tens of thousands of resumes. They could do the brainless thing and basically say, "Okay, everybody's in if meets this qualifications," or they can do the really hard thing which is everybody gets an interview. But neither of those things are good.

0:51:20.5 RS: So they're like, "Well, hey, let's use AI. AI could take a look at the resumes. AI can do these things and it'll make the decisions." Of course, not realizing that when they... This was the issue with the algorithmic decision-making, there's this tendency to say, "We got an algorithm for that, so now let's take all the people out and let's put the algorithm in control."

0:51:38.1 Mike: The person who designed the algorithm may have biases that just got designed in.

0:51:42.2 RS: Exactly. 'Cause they were looking at past hires and they were using past hires to predict future hires, not realizing that past hires had a bias problem. Right.

0:51:49.1 Mike: So how would a PM attack this? Because I know Six Sigma was invented to basically keep things within some sort of statistical process control at very low error rates, like the Toyota example I gave. Is that an approach PM should use? Is it just being better risk managers, knowing that we have bigger risks at scale? Is it using AI to solve that scale problem itself?

0:52:10.4 KW: I mean, for us, obviously we're advocates of the CPMAI methodology. So we always say, make sure that you're following some step-by-step process, some methodology when you're running your projects. We're advocates of CPMAI. It's built for AI projects that project

managers can follow. Also make sure that you have fundamental education on AI, what it is, what it isn't good for. Not a lot of people spend the time necessarily to learn that. And that's why we go over the seven patterns of AI as much as we do and that's why we go over common reasons that AI projects fail, so that folks are understanding that. Because it's different than running a software development project. And so if you go into it with that mindset you're gonna learn pretty quickly that you're not going to be able to successfully run your project.

0:52:54.1 Mike: So is there something in your methodology that deals with this scale issue like Six Sigma does? Like very small defect rates, but at very large volumes?

0:53:01.0 RS: Yeah, so there's the fifth... So the six phases... And by the way, CPMAI borrows from an existing methodology or process that's been around called CRISP-DM, which is the cross-industry standard process for data mining that's been around since the late '90s, early 2000s for data mining projects. And they realized that the fifth step or the fifth phase is called model evaluation. And model evaluation is supposed to be the time when you check. Like before you push it out, it's like you check, does the model do what it's supposed to do? Does it work within the constraints? Or the performance, is that acceptable or not acceptable? What you're supposed to be doing at that point is also being like, "Well, let's introduce some element of scale and see how this model responds in this element of scale. And so you're supposed to be doing that, and then you're supposed to be monitoring and doing it. So the way that you do the specific method can borrow from Six Sigma, you can do many different quality management styles and approaches, defect measurement, error rate measurement, some of which can be more business-oriented for defects and things like that, some of which can be more technical model-oriented, accuracy, precision, that sort of thing, some of which can be more sort of like technology-oriented, looking at how does this impact scale, computing resources. But you're supposed to do that. And as you know, sometimes people don't wanna do it.

0:54:18.5 Mike: It's great advice and any PMs listening and are interested in getting more involved in AI projects, or you're already involved in them and you need to up your game, so to speak, that's great advice, Ron and Kathleen, thanks.

0:54:27.8 KL: And thank you. So I wanted to ask you guys now as we close out then, Kathleen and Ron, a quick question for you, tell us a little bit now about what you're selling from a corporate perspective, that a PM can come and learn to find out more about this field from a PM perspective. Like they wanna come and become a project manager in the space. It sounds like you would be giving them a grounding in AI as well as the understanding of its approaches and needs, as well as the step-by-step process of actually executing it. It's almost like a project management flow for it. Tell me what they can come and find out from Cognilytica.

0:55:05.6 KW: Sure. So we have our free intro to CPMAI. So CPMAI is the cognitive project management for AI. So CPMAI, we're calling it a methodology, but it's really a step-by-step process of how to run your AI projects. So it starts with business understanding and data understanding, as we talked about, goes all the way to model operationalization, phase six. And it's iterative, so you can go back. And that's what we really push for because we've seen way too many AI projects move forward with no plan at all. And then some people are like, "Well, are you following a methodology?" And they say, "Well, yes, we're following the scientific methodology." Kind of like, "I don't think you're really running your AI projects with a scientific methodology, but they just are saying that." I know, 'cause if you take a step back, I'm like, "You're not doing that."

So that's actually kind of scary when we hear that. So we're like, just follow it. Just learn it. It's another tool in your toolkit because this isn't meant to replace anything that you've done.

0:56:02.7 KW: It's not an either/or. It's a yes/and. So it's just take this and learn. And what we've also found is that a lot of people learn a methodology and then kind of make it their own, which is good and bad. They adopt it for their organization. They adopt it for their industry. So we say, just learn it. You have nothing to lose because you have a lot to lose if you run these projects incorrectly. You have a lot of time that you're losing. You have a lot of resources. So that can be money resources, people resources. So just learn it. So we have our free intro to CPMAI, the Cognitive Project Management for AI. You can go to aitoday.live/cpmai, register for free. It's about an hour or two and it just goes over that high level overview. If folks are interested in learning more, which is our very thorough, in-depth course that's about 27 hours plus exercises and an exam, then they can go to cognilytica.com/cpmai. So C-O-G-N-I-L-Y-T-I-C-A.com/cpmai. And that really goes into, in a lot greater detail what you need to do each phase.

0:57:07.3 KW: We walk through three different projects with you as well so that you're understanding, "Okay, how do I apply it here? How do I apply it here?" And we also encourage whoever is taking it to walk through a real-life project as well as they're going along with the training so that they can say, "Okay, this is how I would apply it to my organization. This is how I would apply it to my specific project. And then you figure out what your challenges and roadblocks are and how to overcome them. So we found that folks that go through this, they have a much better understanding because also this really is how to run an AI project, not how AI will help project managers where it's two different things, where that's more like what tools and how is AI going to help me do my job better?

0:57:47.8 KL: That's going to be the subject of our next podcast episode that the four of us have together 'cause that's actually...

0:57:53.1 KW: Sounds great.

0:57:54.3 KL: The conversation I wanna have. But I'm still intrigued. So you have the free course where you can learn some stuff about, it sounds like the AI perspective generally, and then very specifically on how to execute one that you guys have boiled out some lessons. You talked about how you wrestled an ethical framework. I assume that's part of this training as well, for example, which you've highlighted. What else do you offer for project managers looking to improve in this space and help their businesses and mission?

0:58:18.7 RS: Yeah. So as mentioned, we actually have a training and certification, which is not free, but for folks who want to get specifically trained in this methodology. And also one of the things that we... And we have a few other things that we have where we work with organizations to help with their methodology and building that out. We have a trustworthy AI framework and we're working on some other things. One of the things I'd like to actually learn from the audience, 'cause we haven't really sold... Most of our customers have been primarily folks who are doing AI and doing data projects, but we are spending more time directly with PMs and project managers. Actually a lot of the most... One of the things that really got us intrigued at this space is that a lot of our most recent CPMAI certified individuals were PMPs and were folks with scaled agile and all these other certifications we're like, "Okay, they're coming from this PM world."

0:59:04.8 RS: And the thing about the PMs is that they may not necessarily be aware of or even be involved with AI directly. So the callout for your listeners is that we're thinking about bringing in just a specific AI for project managers course. That's not about the methodology. It's more of everything that you need to know about AI, all the things that you need to do, and then of course the ways that AI might impact the job of project management, the career of project management. So we encourage folks to reach out to us if they're interested in participating and doing one of those classes with us.

0:59:37.8 KL: Well thank you both, Kathleen and Ron. I appreciate you giving us the lowdown today and letting us throw some questions at you from a project management perspective, project management point of view indeed. So I do appreciate that and I'm hopeful that people will be able to reach out and contact you later. And you're located in Maryland and your course is offered, I would imagine very virtually.

1:00:00.7 RS: That's right. Self-paced, online. And if you wanna reach out to us you can send us an email at info, INFO@Cognilytica, C-O-G-N-I-L-Y-T-I-C-A.com.

1:00:11.7 KL: Excellent. Well, thank you very much guys. And we will talk again later.

1:00:16.3 KW: Great. We're looking forward to it.

1:00:18.0 RS: Thank you for having us.

1:00:20.2 KL: So the project management conundrum of all AI solutions seems to be no different than regular software projects. Well, except that they're worse. Scope can explode given the relentless river of data as you do your work and due to the scale of some of the solutions, a quality error in your final product can be massively amplified. What a risk. Bad project, bad brand damage. Look for a future episode on the application of AI solutions to project management. Y'all ready to be replaced? Stay tuned. If you've listened to this whole conversation, grab up a PDU by going to PMI's PDU reporting center and select online or digital media and manually enter provider code number 4634 and select M Powered Strategies. And the name of this episode is PMPOV 0105, Managing AI Projects and select ways of working in the new talent triangle. I am your host, Kendall Lott, no, seriously, not an AI host bot, not yet anyway, asking you to let us know if you're running an AI project and if so, how you keep it in scope and get it done.

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1:01:28.7 S1: This has been a Final Milestone Productions sponsored by M Powered Strategies. Final Milestone.