The PM Podcast™ - Episode 337: Internet of Things (IoT) Projects may Fundamentally Change Project Management (Free) Transcript

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Podcast Introduction

About The PM Podcast: Cornelius Fichtner, PMP is a project management trainer who helps his students with their PMP Exam prep, and since 2005 he has published hundreds of interviews with project managers from around the world. The interviews are free on www.project-management-podcast.com

Cornelius Fichtner: Hello and welcome to Episode Number 337. This is the Project Management Podcast at www.pm-podcast.com and I'm Cornelius Fichtner. The Internet of Things refers to the ever-growing network of physical objects that feature an IP address for Internet connectivity and the communication that occurs between these objects and other Internet-enabled devices and systems. Internet of Things projects are the projects that you and I will be managing in order to make these devices a reality. And according to Wanda Curlee, these type of projects have the potential to fundamentally change project management. If you are preparing for your PMP exam, then the best way to calm your butterflies in your stomach is to take the practice exam. Our PM exam simulator offers you nine such practice exams to see how it works. And take a free test drive, please go to www.freeexamsimulator.com. The way that Internet of Things projects are changing project management is not just anything and everything can be and will be Internet-enabled but also because the project management software we used will be more interconnected and developing these Internet of Things devices will require us project managers to really get a better hand off on research and development which can be extremely nebulous in the Internet of Things. In a nutshell, Wanda Curlee says that Internet of Things project management is heading our way. And even if your projects are not Internet-related today, they will be in the future. She has no doubt that you will be managing an Internet of Things project. And now, the future is so bright, you simply have to enjoy the interview.

Podcast Interview

Cornelius Fichtner: Hello, Wanda. Welcome to the Project Management Podcast.

Wanda Curlee: Oh, thank you very much. It's good to be here, Cornelius.

Cornelius Fichtner: We're glad to have you. Many of our listeners, they manage projects that are not Internet-related or at least they think they are not Internet-related. They may be building roads or pipelines and I just learned this week that one of them is working in a shipyard. So, is our discussion still relevant

for them? And if so, what can they expect to learn from the Internet of Things as project managers?

Wanda Curlee: Absolutely, it is vital to their industries for all of them, even road construction, believe or not. The Internet of Things right now is in it's infancy. So, the Internet of Things is everything to everybody. Although, there are different definitions out there and we'll get into that in a little bit. But all areas of project management will be touched whether you're in construction, large or small, building roads, if you're doing apps development which is most people can see that relationship. If you're working on products, let's say a household appliance or clothing, all of those have to do with Internet of Things. Maybe not right at this minute but I can tell you R&D work is going on. So absolutely, this discussion will touch everyone in one form or another.

Cornelius Fichtner: You already gave us some sort of a high level overview. What is the Internet of Things? Can you give us the definition, if there is one definition?

Wanda Curlee: Okay. There is not one definition, it's an amorphous term at this point. But let's try to narrow it down a little bit. Everyone has a slightly different aspect depending on what industry you are. But let's go to where every college student goes to, Wikipedia. Wikipedia has a good start for Internet of Things. They basically say it's networking things that may have something embedded which allows these items to gather and share data. That is a rather small way of looking at the Internet of Things. And let's take an example of that. Let's say a retailer has a dress and think of what can be done with this dress. Or let's go into healthcare, what might be the next step of this dress in healthcare. Or maybe, it can even alert to weather. Yes, all of those just based on a dress. And it could even alert the person to some dangers that might be going on behind them, that maybe they are walking on a street and don't realize the cars coming up behind them. This dress could alert them based on the information or centers that are inside that dress. And when I say centers, I don't mean little things hanging all over it. It would be embedded into the threads of the dress or whatever the dress is made of. There are others within the Internet of Things that see the Internet going away, believe or not. So, Internet of Things, even though it's called that, people say, well, the Internet is fairly old. It's on it's way out and there'll be something different that would take the Internet over. But it's still called the Internet of Things because it's communication. AT&T has a little slightly different view of Internet of change. They see it changing our lives in respect to our motive, aviation, energy, healthcare, transportations, and logistics. AT&T goes on to say that it will change the way we do business. Change the way we drive our business models. It will automate things that we do manually today and we're saying that happening over and over again, not just with robotics but with other things, and I'll get into that in a little while. And by doing so, by automating all these things and looking at the Internet of Things, we'll have more operational efficiencies. So backing up a little bit to project managers, think about MS project.

That is a standard tool that we all know. Some of us love it, some of us don't. But it's a staple in the project management community, whether you use the enterprise version or the regular project management desktop version. It's a very manual process today. You go in there and you update the page, you put in the resources, you have to put in your task. But eventually, I see us not even using the keyboard for MS project. The entire project will be interconnected. When the deliverable is sent to the client, MS project is automatically updated, as an example. This would then feed to any PMO software or decision making process, and create dashboards as needed for the executives on a real time basis. That's very different than what we do now. Sometimes, a project manager or the PMO has to go in to several different systems to update executives or to go down to the project manager or to even speak to the program manager. But let's take it from the opposite side. Let's say the executive is drilling down into dashboards and may have a question. Think about this, the question automatically is sent via a conversation system. The company I worked with, we use LINQ but it could be any type of software, even one that we don't think about today. And it's sent it to the appropriate individual based on what the question is. The ideas of IoT are almost limitless at this point. We are just limited by our imagination. Stepping one step further. Think of drones, 3D printers, those people that are add-on an oil rig depend on ships coming back and forth, they're small craft or helicopters to bring them things, whether it be food, whether it be spare parts, whether it be mail from home. It cost a lot of money to ferry that stuff to an oil rig, it can be dangerous. Well, if you have a 3D printer, this will minimize the cost of bringing things over on a ship, on a helicopter. And maybe having it, the helicopter crashing mid-stream. Or maybe the - it's ferrying it by winching it outside of the helicopter and it falls off, so now you've lost it. If you have a 3D printer, and you need the thing immediately, you can just print it off. Now, I understand we're not there yet but we'll get there. And eventually, maybe the, whatever is breaking on the oil rigs sends it automatically to the 3D printer and says, I'm breaking, fix me. So it just prints the new item.

Cornelius Fichtner: Let me try and bring this back to project management because I can see these developments are going to help a lot of people. You've already told us, you know, this is going to touch all our lives. Can you develop this a little bit more for us project managers?

Wanda Curlee: Yes.

Cornelius Fichtner: These are great inventions, it's great progress, but where does it do we come into play here?

Wanda Curlee: Okay. Let's just take 3D printers. Right now they're in their infancy. We need these project managers to go out there with the R&D folks to bring it along to where it needs to be. That needs a project manager, a strong project manager that can deal with R&D, the nebulous, ambiguous items that need to be brought in to this 3D printer. And they need to understand, does it

need to communicate? The project manager needs to understand his or her industry so they can go back to the R&D person and say, have you thought about this or have you thought about that? The new project managers coming in to the workplace today are just fascinating because they have all these different ideas of communicating among things and among people because they were brought up with the Internet. I was not. I was brought up initially with black and white television. So you can see where there's the difference. So project managers are absolutely needed to bring the focus to the R&D folks to make sure that this 3D printer is delivered on budget, on time, and with the quality that's needed. Does that help bring it back to the project manager?

Cornelius Fichtner: Yeah, yeah. Absolutely, absolutely, it does. I know you are the, working in the PMO, you're a PMO manager for a large computer company. Can you open up your programs for us? Is there anything that's IoT related that you are allowed to talk about publicly?

Wanda Curlee: Well, my company does 3D printers.

Cornelius Fichtner: Ah, there you go.

Wanda Curlee: Yeah. That's why I know a lot about 3D printers. And the company is looking at, if you look at 3D printers now and what's brought out on 3D printers, it's white and it really doesn't have any consistency to it. The company I worked for has created a 3D printer that has texture to it. So what comes off of there has the same texture as what it is that it's making. And it makes different colors. It is an inkjet of 3D printers. It has all the different colors of the rainbow that you could want on it, anything that you would see on a piece of paper but it's in 3D now.

Cornelius Fichtner: And I assume that, even though this is first and foremost an engineering challenge, there's also somebody who has to be there and manage the project, that takes it from inception through development, to actual, hey, we're in the market with this.

Wanda Curlee: Absolutely, you have to have testing. You have to have customers out there that are willing to test it or internally within the company to test it. Did it meet the specs? Did it meet with the requirements? Did it meet with our clients what they're asking for? Do we need to go back to square one because it's not working? But the project manager should be assessing this all the way through with the engineers because the engineers like to tinker and like to play, and like to say, well, I can make it a little better by doing this. The good project manager is able to take these inventive minds that are, I like to say it, 50,000 feet into stratosphere and don't understand that we have a budget and a timeline. And bring them back down and say, okay, we can do that but we're going to do that in the next iteration.

Cornelius Fichtner: Okay. I can see how the IoT is going to affect us project managers. You wrote an article about the IoT and in there, you also argue that

the Internet of Things will affect both program and portfolio managers as well. How so?

Wanda Curlee: Okay. Let's say you have the portfolio manager and they're working with the C-suite. And let's just take an example, that the C-suite, be it at the CEO or COO, decides that they want to decrease costs. Let's change that. Let's say, we want to make them - this company wants to be the premier in delivering spare parts immediately. That's a pretty lofty vision. The portfolio manager has to understand what the company is doing and understand the industry. And understand what projects are going on, what projects we may need to bring in, what programs are going on and what programs need to be brought in. But that person needs to understand also their industry and what affects that industry. So, the CEO or COO has said, I want to have immediate spare parts. The portfolio manager goes out and talks to everybody, and interviewing, and then decides, okay, I understand. Well, maybe at this point in time, we need 3D printers. Maybe we need a way to communicate with those 3D printers by putting them into the client's side or customer's side so that the spare part can be done immediately by sending out a link. How are we going to recover our R&D cost for the spare parts that we've designed? Do you do it on a transaction basis? All those need to be thought about by the portfolio manager and brought together. Do they all need to be separate projects or do we have a program? So, the program manager. The program manager actually puts the program together, and says, and well, this is what I think it needs to be in a business case put together. But the program manager is out there on site with the clients or should be at least speaking with the clients. And you would hope that the program manager is at, at least, a business unit level head or maybe even in the C-suite of your customer. They should be providing the opportunities and respect to the portfolio manager to understand of, hey, are we meeting what our clients and customers want? So the portfolio manager can go back and say, wow, I didn't think of that aspect. Are we doing anything in the company to do that from the spare parts who provide it? Maybe it's a drone that needs to go out and provide the spare part. The cost and effect has to be looked at and a role map put together and the benefits. So we want to be the premier, can we afford to be the premier? That's all the portfolio manager. The program manager's providing opportunities and risks. And I like to even go down to the project manager because the project manager can provide the information back to the portfolio manager as well. Are they able to do what the product says it can do? That needs to be fed back. The project and the program managers are the eyes and ears to the client for the portfolio manager. And that's how I see IoT happening. And all of this, when we have instantaneous communications and we're not using the keyboard, we might just be using our cellphone to talk and then, it sends launches to the communication. It’s happening in real time. If we think we're going at the speed of light now, I think we're going to be going even faster soon.

Cornelius Fichtner: Do you foresee the classic distribution of roles where project managers responsible for the tactical implementation, and the program and the portfolio managers, they take over the strategic side, is that still going to be divided up like that?

Wanda Curlee: How about this answer, yes and no.

Cornelius Fichtner: Okay, perfect.

Wanda Curlee: Well, first of all, I want to say that the program and portfolio managers are kind of the newest areas in project management that have been officially recognized, at least, by PMI - Project Management Institute. It doesn't necessarily - so, they are moving. I will tell you, their project management has changed since I started in project management many, many years ago. Who would have thought that we would be putting a strategic aspect in benefits realization into the project? But we are. Portfolio managers are just starting in corporate America, and in the government. That area of project management is going to change. It just has to because we're in it's infancy. So, yes, I do see that it's changing and I see the project and the program managers being more in the strategy area than just the portfolio manager. I think the portfolio manager will be the eyes and ears inside of a company whereas, if they were an enterprise type of portfolio. Whereas, the program and the project manager will be bringing back the portfolio manager for the clients that we are delivering to. And then it might be internal clients, it might be external clients. Either way, as I mentioned before, they are the eyes and ears for the portfolio manager. I have to rely - as a portfolio manager, I have to rely on them to tell me if we are meeting the needs. And if we are meeting the needs of the client, are we meeting the needs of our portfolio? And then, it's a give and take situation. Right now, the portfolio manager in theory can stop a project or start a program. For a project manager, that can be devastating. I suppose portfolio managers can take resources away or add resources depending on where I think the benefits are going. It will be a give and take and a trust scenario that has to be developed which is not quite there yet. And when the Internet of Things happens and things are moving as I said at maybe twice the speed of light, it will even be more dynamic.

Cornelius Fichtner: What kind of opportunities can you see for project managers and the Internet of Things? Where are we heading with our profession here?

Wanda Curlee: Yes. No matter what industry you're in, as I kind of alluded before, the project manager will be there. They are doing the tactical part of your company. If you are in R&D, you might be helping as I mentioned before, the engineers come down and meet the budget, meet the schedule to go-to market, because you have to meet the go-to market, or you'll be left out in the cold. If they're in, let's say retail, and we talked about the dress previously. And you have a client, maybe it's a medical care client. And the medical care client says, I really want my patients to be able to wear this dress and send telemetry to me and I

also want to monitor their weight, and I also want to do this, and I want to do that, and everything. This project manager may be taking it back to the R&D folks and saying, can we do this? Does it make sense for our company to do this? Or they're telling their clients where they can take it next. You mentioned that you had somebody that was building roads. Well we're just now saying those cars that drive themselves, I believe, we'll go on Yahoo!, we'll have those types of cars. I think, within five, 10, 15 years, maybe, we'll be something like the Jetsons where all these cars are driving themselves and we're sitting in the back, sleeping, reading, eating, whatever it may be but there needs to be sensors on the road to guide these cars. And so those project managers in laying out a road will have to understand where these sensors need to be, how do they need to be put, what's the best way? Maybe these cars will know that there's a traffic jam and will be able to go out in a circuitest route. But if the project manager didn't do it correctly, then all we're going to have are accidents out on the road. And life is at stake, I think life is going to be at stake with all of this, because all of this can backfire on us as well. If you're wearing a dress that has sensors that's in and out of its threads, then I would hate to think what might happen if there's a small amount of electricity and maybe the dress catches on fire. So there's many things that we have to look at from a safety perspective. And project managers are going to be the foundation of that. They're going to be the ones who are putting the meat to the road. They're going to be the ones that are going to be able to meet the necessities of everything that we do in our everyday lives. It's just stopped by our imaginations.

Cornelius Fichtner: In one of your articles, you mentioned that we can expect a wave of these Internet of Things project heading our way. And you also say, and I quote, “These projects will be different.” What type of a difference are we talking about here? You've already shown us the various new technologies that are heading our way. So is this difference mainly you know, a different in different technological challenges, new ideas that need to be implemented or is there another difference heading our way as well?

Wanda Curlee: I think there's another difference. Right now, clients or even internal projects are done with the scope. And probably, I'm going to do some heresy here. I think things are going to be moving so differently in five, 10, 15 years from now. The scopes will be radically different. It might be a scope for two weeks’ time because things are changing so rapidly. And as I mentioned before, I think the technology for project managers on how we look at projects will different too. As I mentioned, MS project, you will not be sitting at your keyboard and going around to everybody saying update your time and then you kind of look at it and then say, okay well, this I need to do here, this I need to do there. It will all automatically be done by voice command or even just by the input that everything happens. The system will look at it and say, oh, project manager, by the way, you’ve got a conflict happening six months from now or you have a conflict happening next week, take care of it. Or it might give you

recommendations on how to take care of it. The project manager will still be the value-add. They have to put the, where with all the knowledge, because they have the background, the system doesn't. Therefore, I think, we're going to see differences in scope. It will not be the large things that we see, it will not even a month, we might be going way too weak on scope because of the vastly the different things we're saying and the way we manage it. We will not be sitting, like I said, in front of out laptops, we might be sitting in the beach doing it, who knows.

Cornelius Fichtner: Oh, that would be lovely, yeah. So in regards to executing the projects, I can see that a lot of things are going to bring a lot of fast-paced projects that may not have a fixed scope. So, it's going to be more of an Agile approach that we're going to need and less of a Waterfall-based approach. And now I'm going to commit hearsay here, do you still see the need for the PMBOK® guide in 10 years down the road?

Wanda Curlee: Ah yes. Truthfully, I think the PMBOK® guide is gotten so complex and so onerously big, I'm not sure how anybody passes the PMP nowadays. But in my humble opinion, I think we will see PMBOK® guides for different areas because it's going to become so radically different. I don't think they're going to be - the PMIs going to be able to say, what is it they say, they most often practiced item in most projects.

Cornelius Fichtner: Applies on most projects most of the time, I believe.

Wanda Curlee: Yes, I don't think we'll see that because, I think, as you've mentioned, Agile will be happening so much and it will be so different based on the industry. There might be a few common core elements but it might not be enough to fill a PMBOK®, so we will see PMBOK®s for in different areas. That's Wanda Curlee's crystal ball, whether it goes that way, I don't know.

Cornelius Fichtner: I have another crystal ball question here. And it's this here, you mentioned that you know with the software that we will using to manage our projects, to track our progress and all of that, will be different. The actual methods and approaches that we need to deliver Internet of Things projects, will those be different?

Wanda Curlee: Question, I think so. Again, this is a crystal ball question. I think as many companies are, we will be virtual. I see companies, instead of having a massive amount of employees, might be bringing in, oh, this person has this expertise, and that person has that expertise, and this one. And we'll be going back to a model, I hate to say, back at the medieval days, but I think it will be back but will come with our tool of tricks or a tool bag and say, this is what I have to offer and I want to go and do this for six months or three months. And that's how companies will stay Agile and meet the demands of their clients. So yes, I see it differently. It will need project managers that can be very flexible, that can work with the dynamic situation of people coming in and out, more so than

we have today. We will definitely have to be able to work with different cultures and different environments coming to that and be understanding of everyone's culture. Sometimes, we in the West tend to be a little bit arrogant with our cultural bias. But, I think that's how it's going to end up being with each project manager will come with his tool bag, his or her tool bag and we'll be going to different companies and saying, this is what I have to offer you in these areas. It's scary I know for some of us, especially those of us that are used to being wedded to a company and having our benefits. But I think the newer generation really likes that idea.

Cornelius Fichtner: One thing that I also noticed today, that it seems to be an ongoing thread to our discussion is business acumen. We talked about portfolio, we talked about program and how we project managers need to better understand the business, and help the business, and work with the business. So, I pretty much assumed that this is also a trend and that we, project managers, have to, you know, step up our game when it comes to business. And understand how we fit in, how our projects fit in, and how we can help the business through our projects if they are, not only if they are Internet of Things based, but in general. Am I seeing this right?

Wanda Curlee: Oh, absolutely. Project managers absolutely must understand where their project fits in to the dynamics of the organization and the company. If you're working on a project that has nothing to do, it's a pet project of somebody, and I think we've probably all been there once or twice, you are headed for disaster. You need to make sure that your project fits in to what your company is doing. And if you go on to any company website, especially if they're in technology, usually one of the first things that you see on their site is a discussion about Internet of Things - not Internet, sorry, Internet of Things. And understand how your project is dealing with the Internet of Things. Beyond those trending projects, don't beyond the projects that are dealing with products that are maybe going out or that will be sunseted in the next couple of years. Try to find those things are trend setting that, yeah, they have high risk but also they have high reward.

Cornelius Fichtner: So, in closing, can you give us, project managers, a few ideas on how to prepare for all of these things that are coming? What are the two, three things that we can do today in order to prepare ourselves for the Internet of Things projects that are heading our way?

Wanda Curlee: Absolutely. Understand where your company is going in the Internet of Things. If it's not even being discussed, maybe you should start the discussion. Or maybe look at other opportunities because the Internet of Things is here and it's coming, and it's going to hit right between the eyes. Understand and do - second, I would see what other companies are doing better within your industry and outside of your industry because what's going to happen is the dynamics are going to change. Somebody that used to only be in logistics will

may now have to deal with other companies that they've never dealt with before because it just didn't make sense - but now it does. So understand the trends in your industry. Understand how things are happening within - on the tangential areas of your industry. And be a trend setter, don't set back and just let it happen. And finally, what I might recommend is to follow ICAN. ICAN is the Internet Corporation for Assigned Names and Numbers. All those domain names, that is handled by ICAN. Now, why do I say that? You say, well, they just assign names. Well, not really. ICAN is worldwide, it's an association that's worldwide. They are scared to death, this association is scared to death of wireless. ICAN doesn't really understand how wireless fits in to their area. And there is even some dodging going on that maybe ICAN doesn't even assign the names on the wireless area. There's another organization out there that is actually coming up, that may be saying, ICAN, you're the hard-based Internet, we're doing the wireless. And that's where I mentioned before that maybe the Internet is going away and there's something else is coming. But they have all kinds of different groups and it's totally free of charge. Different groups that talk about Internet of Things. You say, well that doesn't really deal with ICAN. Well, yeah, it does. Go out and find an association that deals with that. If it's not ICAN, then, something else that really piques your interest. Maybe, you're an engineer and also a project manager, you want to get into an engineering association that is talking about Internet of Things. Know where your area is and know about what's going on.

Cornelius Fichtner: All right. Wanda, thank you so much for your time today.

Wanda Curlee: Thank you so much, Cornelius. I really have enjoyed this opportunity and I hope I have brought some knowledge, whether it be small or big, to the project managers that view this podcast.

Cornelius Fichtner: And that was our Internet of Things interview with Wanda Curlee. And that's it, thank you very much for listening. As always, you can find us on the web at www.pm-podcast.com. Please send your emails to info@pm-podcast.com and when you write and you happen to remember, please do tell me where in the world you are writing from. And if you're preparing for your PMP exam, then the best way to calm the butterflies in your stomach is with the www.freeexamsimulator.com. Give it a try. And finally, we have this: “If you fool around with a thing for very long, you will mess it up.” Until next time.

Cornelius Fichtner: Wanda one more thing, what's your favorite aspect of the Internet of Things?

Wanda Curlee: My favorite aspect of Internet of Things is that with the newer generation that's coming in to the workplace that have been brought up with the Internet, and have so much imagination and know what they want to do with their lives coupled with what’s this new technology, new ways of doing things, it's our imagination that is going to let us go to the next step beyond. It could be doing a holograph text that we saw on Star Trek, maybe now making food from 3D

printers. To me, it's just fascinating where we might be going with the Internet of Things.

[End of interview]