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Speaker: Welcome to the 20-minute IT Manager series brought to you by the Management Mentors. Tom Mochal is the president of TenStep, Inc. TenStep specializes in project management, methodology development, training and consulting. Mike Sisco is the president of MDE Enterprises, Inc. MDE provides insight and tools to help IT managers of the world achieve more success.

Tom Mochal: Hi, this is Tom Mochal with TenStep. Today's session of the 20-minute IT Manager is understanding and managing project issues. First, let's talk about problems in general. All of you know problems come up on all projects. It's a rare project that doesn’t have some problems. And the larger your project is, the longer it is, the bigger it is; the more problems are going to pop up. Normal problems get surfaced and are resolved. As a project manager or as a team member or as a manager, you see this all the time. Problems come up, they're resolved. Problems come up, they're resolved. They may take a little bit of research, but ultimately they're resolved in a fairly short order.

There are many kinds of problems, technical problems, political problems, trying to get people to agree on things, differences of opinion. In some of these cases, they're problems only because they're causing a delay on the project and not necessarily that there is no solution, but just trying to get people to agree, requests for guidance. In those cases, people think they probably can proceed, but they are temporarily stalled because they're looking to make sure that they're doing things the right way. Those can all be classified as problems, the kind of problems that always pop up and are eliminated fairly quickly.

Issues, on the other hand, are special types of problems. This is a good definition for an issue. It's a formally defined problem that will impede progress of a project and about which no agreement has been reached. The reason that no agreement has been reached is that the resolution is outside the control of the project team.

Let's look at this definition a little closer. First of all, a formally defined problem. What I mean by that is if you can't identify the problem, if you can't document the problem, you'll not be able to resolve it. And so although it seems obvious, it's actually not quite so obvious in all cases. The problem must be formally defined. You need to be able to write it down on paper and be able to explain it to people because if you can't explain it, you're never going to be able to resolve it. It's going to impede the progress of our project. That’s important. There are many things that come up that are concerns, but they're not really going to impede our progress. So we have to make sure that the problem is severe enough that it's going to impede our progress. It may not mean the project is going to be cancelled. It doesn’t have to be that severe, but it's going to impede the progress of our project.

And lastly, no agreement has been reached. And why can't we reach agreement? It's because the resolution is outside the control of the project team. These three things, and especially that last point are what separates typical problems, your normal run-of-the-mill problems, from an issue. And it's especially because of that last point, having to go outside of our project team that requires us to put more diligence and a more formal process in place to be able to manage issues.

So let's recap that discussion. Let's say a problem pops up and we're going to figure out, is this really an issue. First of all, have we defined it? Have we written it down in other words?

Do we really understand it well enough? Will it have a significant impact on our project? And will it require a decision by others outside the project team? If it's true, yes, yes, yes for those three questions, then we can elevate it to the level of an issue.

If we're going to resolve a problem, we first will have to identify the cause of the problem. And then we have to determine whether that cause can be remedied or if we can only remedy some of the symptoms that are being shown. Here's an example of what I mean by cause and symptom. Let's say your automobile is making a knocking sound. If you address the symptoms, that might include giving earplugs to the driver. Now if you were the driver, you wouldn’t hear the knocking sound anymore, right? And so you might think the situation was resolved. But have you really solved the problem? No. The problem probably is something in the engine and requires you to perhaps increase the octane of the gasoline that you got in order to actually resolve the problem. Now, in some cases, you can't resolve the cause. It's important to understand the cause, but sometimes you can’t address and resolve the cause and you have to address the symptoms instead. But it’s important to know the difference so you know exactly what you’re attacking.

One thing that you’ll see fairly quickly about resolving issues is that -- remember issues are just a special case of a problem. And there are many techniques that we can use to resolve problems. Problem resolution has been around a long time. I’m going to give you three examples in the next few slides. Root cause analysis, Fishbone and Pareto. But please keep in mind, these just three examples of what are literally dozens and dozens of different techniques that we can use. In many cases these techniques depend on the specific kind of a problem that we’ve got. And the three examples that I’m going to give you are ways that we can cover three types of problems. But we’ll see as well, there are many others.

The first one that we'll look at is called root cause analysis. And if I said, how many of you have used root-cause analysis, maybe half of you would raise your hand. But if I asked it more generically and said, how many of you have ever had a situation where something occurred that was a little bit screwy or something you didn’t quite understand. And so you started asking why. Why did it happen this way. If you did, you’re basically using a root-cause analysis, so I think this is a technique that all of us have used. But I just wanted to explain it formally because it is a pretty powerful technique. Root cause analysis is all around asking a series of why questions. We ask why, why, why until we can’t ask why anymore. And at that point, we may have come upon the root cause of the problem.

Here is an illustration that I think drives home this point. Let’s say a plant manager walks by the assembly line, notices a puddle of water on the floor. The plant manager knows that water’s a safety hazard. Somebody could slip on it or hurt themselves. So he asked a supervisor to have somebody get a mop and clean up the puddle. The plant manager is proud of himself for fixing this potential problem. The supervisor, however, is not quite so happy. The supervisor could have gotten someone to get a mop and clean up the puddle, but the supervisor starts to wonder, I wonder what caused that puddle. No reason a puddle should be on the floor here. So he starts to ask why. And he discovers that the water puddle is caused by a leak in an overhead pipe. Now again, he might just say, okay I think I’ll replace that pipe then. But instead he asks more why questions. Why is that pipe leaking? And he discovers that the pipe is leaking because the water pressure is too high. So he says, well why? Why is the water pressure too high? He discovers the water pressure valve is faulty. He asks why again, well, why is the water pressure valve faulty? He doesn’t get any more answers. So in other words, the water pressure valve is just faulty. There’s no reason other than it has now failed. So he has gotten to the root cause. Instead of just taking a mop and picking up the water on the floor, he now realizes that that water on the floor is caused by a faulty pressure valve. So the valve is replaced, which solves the symptom of water on the factory floor.

The second technique we'll talk about is the fishbone diagram. And do you see this diagram that I've got on the screen? Do you see why it could be called a fishbone diagram? Kind of looks like a fish skeleton, right? A fishbone? These are also called Ishikawa diagrams, in case you hear that term. Ishikawa is the Japanese professor who pioneered this technique. Let's take an example of a fishbone diagram. We'll take it in three parts to better illustrate it. This technique is a great technique when you've got a generalized problem that has a lot of complexity and may well have many symptoms and many causes. Let's say for example, that we're on an important project, we want to send out a request for proposal, or an RFP. We've got a date, it's been set in stone for quite a bit of time. And now that we're getting closer to the date, we realize that date's slipping. And it hasn't just slipped once, but now let's say it's slipped twice. It's got to the point where it's becoming a problem, and it's going to impact a project, because that RFP is going to be out late. But it's fairly complex as to what's causing the RFP to be late. So we sit down with a group of people, this is a technique we use in a group, and we draw first of all the straight line, which ends up being the backbone of our fishbone diagram. And in the box, we put the overall problem we're trying to resolve. So number 1, we have the RFP release date is slipping. And then we go around, we do a brainstorming exercise. And we start to fill in some details in terms of why the release date could be slipping.

Now this is a brainstorming exercise, and so we're not quite sure yet exactly what the causes and effects are. We're just trying to get people's ideas. And for each one we get, we'll draw a little bone on the backbone here. So notice in this case on number 2, we've got four ideas. It's related to the manager of the project, it's related to the skills and experience of the project manager, it's related to the client and it's also related specifically to the category or the type of RFP that we're trying to get out. It's just complex.

After we have all of the initial ideas -- we were just brainstorming ideas for the causes -- then we started going back and we start saying, okay, are these really causes or are they symptoms, we do a little bit of a mini root cause analysis. If there are symptoms, then we say, what might be causing that to take place. And for each of these causes, we draw lines or bones off of the main line. So you see how we have fleshed out, if we just take this through the rest of the example, how we've now fleshed out all of the various bones on this fishbone diagram. Now, when we're done with the fishbone diagram, we then have to go through a process of trying to figure out now, of all of this information, which are the things we think are at most at fault, and which of the ones we think we can resolve. Because remember we built this fishbone diagram through a brainstorming process. So we're going to put a lot of ideas up here. We have to figure out which of the ones we actually want to try to focus on.

The last technique we'll look at is Pareto analysis. Pareto is the name of the Italian professor that pioneered this technique. This is a good technique to use if we have multiple problems that we've encountered, and the problems can be tracked and categorized. What it allows us to do is figure out which problems can be resolved first. Let's say for example that we've got a system that we just implemented, and we're getting a lot of problems in the help desk. We're getting matter of fact dozens and dozens and dozens of problems, and so one thing we could do is we can start tracking and categorizing these problems. And let's say in the example I've got in the slide here, that we've been able to categorize these problems into six categories. And over a period of a couple of weeks, we've counted the number of problems that have come from each category. Now certainly we could have been resolving them as we go as well, but this is giving us some information that we can use to make some smart decisions.

What we see is that the problems categorized as problem 1 have occurred 115 times or 53 percent of the total number of problems. Problem number 3 has been reported 50 times, and between problems 1 and 3, they make up 77 percent of all of the problems that have been reported. What this tells us is we should spend the time to resolve problem 1 first. And, then we've going to resolve problem 3, because it's the one that has the next most occurrences. If we didn't have this information, we might find is that we're spending our time on problems 4 and 5, when really those problems aren't going to buy us much in terms of the overall number of problems that we've got. Now I understand people are saying, well, what if problem 6 only is going to take us one hour? I'd say well, now we have the information to know whether or not we want to even spend that hour. And in this case, probably we would, because if we can resolve problem 6, that'll take care of 15, or 7 percent of the cumulative total, if we can resolve that one problem.

So this Pareto analysis gives us the information that we can use to make some decisions in terms of where we should be spending our time first. And that's the purpose and the value of this kind of analysis.

After going through the last few slides, I might give you the impression that if you only knew the right technique, you could easily resolve all problems. And so now I'm sorry, I have to give you some bad news. Sometimes, there is no good resolution. So what do we do? If it's an issue, it's causing us a problem right on our project, so we do have to do something. In this case, we might need to make decisions amongst the bad alternatives. We might have to see which one is better for us in the long term, even though they might all be painful in the short term, which one's better for us long term. And we might also want to see if one of the solutions causes less pain. Again, none of the solutions that we can propose might be perfect, none of them might be acceptable, if we had our druthers, but there is no good resolution, and so we might need to figure out which of the solutions is going to cause us the less pain over time.

So a few things to keep in mind in your overall issues management process. First of all the project manager is responsible for the issues management process. It doesn't mean the project manager has to resolve all of the problems, as a matter of fact, by their nature, issues can't be resolved directly by the project manager alone. But the project manager is responsible for the overall process. So like all project management procedures, we want to make sure we create our process for managing issues ahead of time. Let's not wait for the first issue to pop up, and then have to figure out how are we going to resolve it, let's have thought through ahead of time, as part of our project management procedures how we're going to resolve these. Of course, the best plan is to have a good set of project management procedures at an organizational level, that everyone follows and everybody understands. Then when a big problem occurs, and you realize it's an issue, you can just be calm, and say okay, I'm going to dust off my issues management procedure to make sure that I can resolve this, you don't have to be panicking.

Generally, you need to resolve issues as soon as possible. I have seen people that have issues logs that have issues on them from a month, two months, five months ago. And then I really have to question whether they are in fact issues. Do they meet the criteria for an issue? Are they impeding our progress? If that's the case, then they need to be resolved as soon as possible. And if we've got issues on our plate for three and four and five months, I question whether or not they're really issues. They're probably not really issues. We need to make sure similarly that we're diligent in following up on all of the issues. If we have an issue, we need to be tracking it, we need to be making sure on a weekly, if not a daily basis, that we're making progress trying to get that result. And once we get the issue resolved, we need to be diligent in terms of following up, making sure that our issues management plan is successfully resolving it.

One of the key criteria, and perhaps *the* key criteria in the whole process, is figuring out or determining who should be involved in resolving the issue. This is one of the key aspects getting the issue under control. Remember by their nature, issues need people to be involved from outside the project team, so early on when you see an issue and you understand its nature, you need to figure out who needs to be involved in resolving it. Then you can assign it to somebody, assign it to a team member and look for alternatives, look for the impact and ultimately bring this to the attention of the people who need to be involved. And this is the part that project managers typically fall down because they're not sure how to resolve it because they're not sure who needs to be involved in making the decision. This is the key point in our issues management process.

Once the decision has been made in terms of how we're going to respond or resolve an issue, we need to implement an action point to make sure that we actually carry out the work required to resolve it. What does that action plan look like? It's going to have the activities to perform, it's going to have the responsible team member for each activity, it's going to have due dates, effort hours, dependencies. Does this look familiar? It's basically your schedule, right, or your work plan. So we want to make sure that our action plan for the issue is added to our work plan.

Let's summarize what we've learned in this session of the 20-minute IT Manager. First of all, all projects have problems. There's nothing wrong with that. Issues are major problems; they require outside help. Most problems that pop up are not issues. And in fact, only a few will be issues. The longer your project is, the more issues you'll have, the shorter the project, the fewer. There are many techniques for resolving issues. We looked at three, but there's certainly many, many others. The project manager is responsible for managing issues. It doesn't mean they have to resolve the issue, but they're responsible for the processes that are used to manage issues. And they're responsible for making sure that the issues ultimately are resolved.

The key point in issues management is understanding who needs to be involved in the process. So that's where a lot of project managers struggle today. They have a problem, they may even be able to define it, but they're not quite sure what to do about it. The key point is figuring out who does need to be involved. Then you can assign it to a team member, get alternatives, figure out the resolution, get those people together that need to make the decision, and ultimately drive a decision home.

If you'll click on the attachments tab above, you'll find an issues submission form which is a template you can use to document the issue and ultimately use it to identify the alternatives, the recommendation, the impact on your project, etc. It's a good technique, it's a good form to use as part of your issues management process.