

Transcript for Swim Lane Diagrams Presentation

Hello. In this module what I hope to do is spend a little time with everyone taking a look at process mapping, which is really just a subset of process modeling. I know in earlier modules, my colleague Joe Gus spent some time in BPMN notation and process modeling in general. Today what I want to do is spend a little bit of time taking a look at the high level process map; it's a great tool for communication, for stakeholders, for sponsors, and other people that want to have an understanding of the system or the process that you're working on. But then what I'd like to do is focus on the swim lane diagram. It's probably my favorite process mapping tool, and the reason why is because it does a great job of helping us first describe flow; it also does a great job of weaving in all of the multiple stakeholders or actors that interact with the system; and maybe my favorite thing is that as an analyst, helps you to identify hand off issues, bottleneck issues, or other white space or inefficiencies that you're going to see in your processor system.

And the final thing that I think swim lane diagrams do a really good job of is, if you want to, you can also tie in operational or performance metrics into the map itself. So first we'll take a look at high level maps, and then we'll dive into the swim lane diagram. So, before we run, let's walk, and just do a quick review on some process mapping techniques and tricks. You know, I like the process map as a tool to kind of level set for the project team. I like it as a tool to communicate to the sponsor early on in the project; and I certainly like it as a tool to communicate out to stakeholder groups. You know, they always say, a picture's worth a thousand words, and process maps certainly fit that bill. At the bottom of the screen here, what we're taking a look at is your traditional, basic, high level process map. I like high level maps to be three to seven steps, something that can fit in one single slide or one single page.

Now, in some of your more advanced process modeling notation, there are a variety of symbols that you'll use, and in this next slide I'll give you some examples. My two favorite are the two and that I can consistently use on high level maps are the process square and the decision diamond. All of these other symbols are commonly used but they're optional, and I'll be honest. When I'm building maps, it's just the first two here that the process square and the decision diamond, that I find useful. Ironically I take a standard squared sticky note, tilt it ninety degrees, and you certainly got a decision diagram; so they're very easy to convert from your manual paper base way of building the map into something that you can create electronically. Some rules of thumb when you're building a high level map include remembering that a map-a high level map is more of a communication tool, less of an analysis tool; so we want it to be clear and simple to understand.

In a moment, we'll dive into how to detail out every single step, reword, loop, and detail related to the system; but for a high level map, what you want to do is you want to make it simple, and what our research on cognitive overload has shown is that, well, at first as long as the map was five plus or minus two, you know, so we're taking a look at two to seven blocks, people-most people understood that. What the current research shows is that the closer that you can get to four objects or boxes, the better. So my first example is a great example of a very simple high level map; the second one, which we're going to dive into it a little bit deeper is, uh, a high level map of the pizza fulfillment process from the beginning where the customer decides that they're hungry, all the way up where the customer has had their hunger fulfilled. You can see that we've got one, two, three, four, five, six, and seven steps; another nice high level process map.

So soon after you create the high level map and use that as a communication map to reach out stakeholders, the project team and the analyst within the project team are going to want to drill out; they're going to want to take that high level map and start to identify all of the specific steps that are associated with the system. In this example what I've got at a high level is the making breakfast process system, and you can see I've got inputs and outputs identified; and at first it's just a one box, a one task process system. And then what we'll do is we'll drill down and lay out the details related to that. So, from making breakfast we drilled down, and that includes the subtasks of preparing the ingredients, cooking the ingredients, and then, serving them. Now in some cases, you'll want to drill down to subsequent subtasks and steps for each one of the areas, so we could drill down both, preparing the ingredients, cooking, and serving.

In our example, though, I'm just going to focus on drilling down on cooking the ingredients, and the number of layers that you decide to go down, whether is one, two, or three or more layers, is really up to the analyst and really up to the level of detail that is going to be needed to better understand the process system. This classic approach is called the drill down approach. I like it, but it's limiting because it-it assumes that you're just dealing with one stakeholder; you're just dealing with the job or the outcome that a single stakeholder group has. So an alternative to the drill down approach where you take a simple high level map and drill down each of the subtasks associated with it is the swim lane diagram. This is my favorite detail process mapping tool, and I'll give you some reasons why; but first let's take a look at the top of the screen here.

What I've got at the top of the screen is just a simple high level map. Again, it's the pizza fulfillment process that we took a look at earlier. The swim lane diagram is simple in concept. What it allows you to do is it allows you to integrate different stakeholder groups or actors that interact with the system, and creates separate lanes of activity. So on the bottom of the screen here you can see I have created separate stakeholder groups, the customer group, the cashier group, the cook group, and the delivery driver group, and built out lanes for the activity that they have associated with their interaction in the system. Now, in this case I'm just doing a one to one mapping where I'm taking each high level step and associating it with the lane of the stakeholder involved. Let's take a look at how that works. So I've got, customer is hungry; that maps obviously to the customer group, as well the calls for the order; taking the order is handled by the cashier, and then there is a series of steps that the cook takes care of, from making the pizza to cooking, determining whether it's correct, and in this case, also boxing the pizza; delivering the pizza is of course handled by the delivery driver, and then once the delivery driver routes that to the customer, this-this process is complete.

Now, using a swim lane diagram to just overlay the one to one steps of the high level map is, well, somewhat effective, but where the real beauty of the swim lane diagram comes into play is when we get a chance to analyze further those hand offs, and when we get a chance to detail out further; we'll take a look at some examples next. So in this next example I've got the system that handles completion of enrollment for a student, and I've laid it out as a swim lane diagram, but I've used the BPMN notation as described by my colleague Joe Gus [phonetic] earlier, the module. What I like about this particular example is, again, we've got different stakeholder groups that are represented within their specific lanes. We've also got details related to hand offs, and hand offs can be identified any time you see a flow arrow cross lanes; and also what I like about the swim lane diagram is that it gives you an opportunity to show reword groups.

So, for example, this last step handled by the student, this reword loop can easily be identified. Again, one of the characteristics of the swim lane diagram that is really effective is that you can identify a variety of stakeholders that interact with the system from an individual, like the student, to an organization or a group like the Admissions Department, to a specific job title, a specific holding area. So now we're talking about entities that aren't actual people or groups to even entire IT systems or machines, the student input system, for example; gives you a lot of flexibility then in identifying, in this case, some of the actors that interact with the processor system. One of the problems or traps associated with detail process mapping in general, and certainly is the case with the swim lane diagrams, is how we describe detailed flow but within the constraints of our writing media, whether it's a slide or a flip chart or the whiteboard that we're working on.

So if we take a look at this-this diagram is a detailed process map; as you can see from the beginning, we flowed through our process, and then we used this connector to loop over and continue flowing, and what we end up with is a snake like diagram. It's very difficult to read and interpret; it's also difficult for analysis. This is not the approach that we're looking for. Same thing with swim lane diagrams; there's often a misconception that each of the lanes needs to start at the same point in the diagram, but that just creates confusion. We don't want to do this. Instead, we want to identify where our stakeholder interacts with the system and place that in the appropriate spot or flow in the drawing itself; so the bottom one is a more clearer and better understanding of how flow through the system occurs.

Another trap associated with detail process mapping, and in particular swim lane diagrams, is the fact that we often forget to include information about the transportation or the stakeholders or actors involved in the hand off of the information itself. So let's take a look at first an incomplete swim lane diagram, the top diagram. In this case what we've got is a campus customer who is submitting an application, and in the drawing we have a direct hand off from the campus customer to the technician. In reality, though, this process, this system, has a number of transportation hand offs that occur to, and we should include that in the diagram. So in the lower swim lane diagram what we've got is an example of the stakeholder group, the campus customer, a student courier in mailroom services, which better reflects some of the hand offs that are occurring.

For example, the campus customer submits their application; it doesn't go directly to the technician; instead it goes to a student courier; the student courier has a number of steps or activities, and then another hand off to another holding area, in this case, mailroom services; and then eventually we get this to a technician or to other groups. The bottom diagram is a much better representation of what's going on within the system. Remember, when building detailed process maps in swim lane diagrams, we want to be specific in the way that we describe the objects that are being drawn. Often times we are too brief and that brevity creates confusion; so, for example, the word "review" often means to decide and describe specifically how that decision is taking place. Some other examples, "analyze" is often an overused summary word that creates confusion.

What-what's really going on in the analysis? Often times an analysis is some sort of an inspection that helps determine certain threshold, so let's describe that specifically; "monitor," "track," all words that are great summary words, but don't give us the details that we're hoping to understand in our system. And in some cases, the words that we're using are footnotes for an obvious problem where the analyst who is trying to draw out the map just doesn't really know. In that case, it's better to build out the map, place some question marks or include a footnote saying that this is something that we need to dive

deeper and have a better understanding of, and then fill that in at a later point in time. In some cases, the words that we use inside the box, just doesn't fit. We've drawn out a screen or a paper real estate to do that, and in those situations I'll use this approach, where this diagram becomes more of a task description diagram.

So the validate application completeness-the actual steps I'll notate down at the bottom of the diagram. The determined credit limit, I would describe the procedures that are associated with it. When setting up the account, I'd list out the checklist that's being used. There's a variety of ways that you can use this; there's a variety of ways that you can diagram and display this. In the end, though, we want to create maps that are clear, understandable, and can be used for analysis. Here's a simple example of how a swim lane diagram was built using a sticky note approach, and then performance or operational metrics were added to get a better understanding of flow through the system. I even like how the team decided to lay out ambitiously the most common, or in this case, the longest lie time or commonly occurring path through the system.

So we've got our stakeholders, sales, finance, and legal; we have the process time and the lie time associated with each steps; and then we have the least common flow through the system, a very simple and effective way of not only describing flow, but also including metrics of how long it takes to perform each task or step. Here's another example of incorporating performance metrics into a swim lane diagram. Again, we've got our stakeholders off on the left hand side; we've got a process steps that are occurring and the hand offs between stakeholders groups. But you'll notice at the bottom a time metric was incorporated, a time line, including the number of days that it took for a particular step or a series of steps. These timelines are very powerful tools to help with analysis.

So in summary, what did we do? We spent a little bit of time taking a look at the high level process map; it's a great communication tool, but in terms of analysis, the swim lane diagram is the tool that I really prefer to use. It helps us to understand flow, it gives us a better understanding of how multiple stakeholder groups or actors interact with the system; it's an exceptional useful tool at understanding hand off issues, bottlenecks, other problems between stakeholder groups or issues that are occurring between those stakeholders groups; and it can also be an effective tool at incorporating process or performance metrics; gives us better understanding of how flow is occurring through the system.