

IBM Podcast

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MATHENY: Welcome to this IBM podcast, Six Ways To Accelerate Android Mobile Application Development. I'm Angelique Matheny with IBM.

Android based smartphones, pads and other mobile and interconnected devices are rapidly growing in popularity. Devices, manufacturers and application providers are competing to introduce high-quality, innovative products on shorter time scales.

Development resources are often scarce, so using these resources effectively is critical. And, applications are targeted to multiple devices with different screen sizes, touch pad usages, but you still want to architect once and then reuse strategically.

These issues create many challenges in understanding your user needs and turning them into requirements in product engineering as well as security and testing concerns. Product line engineering also is playing a big role in allowing companies to strategically reuse assets.

And in today's podcast, Martin Bakal, IBM Rational worldwide market manager in the electronics industry joins us, and

he'll discuss ways to accelerate Android mobile application development using the IBM Rational platform for software and systems development and requirements management. Hi, Marty, welcome to the podcast. Thanks for joining us today.

BAKAL: No problem. Thank you for inviting me.

MATHENY: We have a lot to cover, so let's just jump right in. Marty, describe the market opportunity for mobile application development.

BAKAL: Okay. The mobile environment is growing pretty fast, specifically the application development -- everybody can see with smartphones and different types of devices. Not only are there new games coming out, but there's also interconnectivity between cars, where you can actually power your car or you can do different things like that. Everyone sees different commercial about these things.

But the real question is, what's going to happen next? I mean, we have these devices now in our hands that are not only full-powered computers, but they also have the ability to give you exactly the location where you are, you can scan things into them, you can get lots of different information.

So a lot of this is getting very integrated between the

embedded world and the IT world as we're starting to discuss sort of information from the phone talking about where you are, and then integrating it in and then working with a whole network of other devices from computers inside your house, to computers inside your car, to controlling your TV like a remote, many different types of things. But a high-growth market with many different uses, more so than a standard computer sitting on a desk.

MATHENY: Marty has just mentioned some of the challenges. So can you describe some of these challenges in more detail of the Android mobile application development?

BAKAL: Sure, I'd be happy to talk about some different Android challenges. First of all, one major challenge we're seeing here is, I mentioned all these different types of things; well, as you start to develop applications, you get lots and lots of different feedback from different customers.

And are these important customers for you, or what are the needs, and how do you prioritize those, and how do you make decisions as far as what you want to develop next in the next steps?

Another thing you want to talk about is, how can I reuse what I'm building and actually reuse it in another product

and take the next phase as you're developing these things kind of worldwide in different places.

Another development challenge we really talk about is these are many different size screens. You go anything from a pad, to a small phone, to a larger phone, to kind of a computer, all these different devices. And then you start worrying about input methods, whether it has a separate keyboard, or a touch screen, or different things like that.

You also have to worry about sort of the variability in different versions, whether we're talking about Android, but we may want to extend it out to iPhone or BlackBerry or Symbian or many other types of things.

So there are other challenges as well. For instance, data security, people log into their banks, they get medical information, different types of data. Well, that's all application data, and you want to actually have good security, but it's going over the Web and you're logging in and you're doing different things. It's a much different thing.

And one other development challenge I'll talk about is resource constrained environments. You have battery life which can be very short, sometimes different things like GPS draw up a lot of the battery life on some phones, maybe not

as much on other ones. How do you actually manage to manage that and not run out of it? All those different types of pieces. So there's a lot of resource constrained environments here we have to deal with, unlike in a PC.

And when you simulate, you may not get everything you need.

You may actually have to discuss sort of how to run it on the hardware and then see what happens, because the simulator has unlimited power unless you really set up ways to control it. So those are a lot of development challenges that we deal with.

MATHENY: I bet there are. You know, we do want high quality on shorter time scales, so what are some of the ways to accelerate the Android mobile application development?

BAKAL: Well, when we start to talk about ways to accelerate the application development, first we have to understand a little bit better about our device...we have device development and we have sort of application development. Now, what we're really discussing here, application development primarily, but we also want to discuss where...what devices these things fit on and all the different types of pieces like that.

That's one way to start segmenting the market and start looking at the different needs is to see, am I developing

something that's much more of an application that's going to run on an embedded device that's going to somehow control a car or be sitting inside the car as an application?

Or is it going to be something that's going to be on a phone and just be like a game or a bank app that's really just an IT application just sitting on a mobile phone. That's one way to start segmenting it. We'll discuss some more in a couple minutes here.

MATHENY: So, and the title of this podcast -- Six Ways To Accelerate Android Mobile Application Development -- can you describe these six ways?

BAKAL: Sure. I'm more than happy to describe the six ways. So the first way I just like to talk about is understanding customer needs or Product and Portfolio Management. What I mean by Product and Portfolio Management -- PPM for short -- is really understanding your customer needs and being able to prioritize it into products in the overall portfolio that you're building and be able to prioritize them and be able to pick different parts you need. So that's one of them.

Another one we like to discuss is drive reuse through model-driven development. Now, really there's a few of these that are all going to be about driving reuse. But one

of them specifically is if you can design something graphically and understand the application you're building and understand how to system engineer it correctly, then you can drive it in a model and actually drive that down to the final application. So that's driving reuse to model-driven development.

The third way is to drive reuse through enhanced collaboration. You have to be able to collaborate with different people. Sometimes these apps are actually developed in multiple companies in different groups because you're dealing with something inside of a device and maybe also something on an actual TV or other pieces like that when you start to talk about it. You have to get those people and those different systems collaborating in a very effective manner, so driving reuse through enhanced collaboration is the third one.

The fourth one is driving reuse through product line engineering. What we mean by product line, first is the question some people might ask. When we start to talk about product line engineering, we're talking about, you have multiple products in an overall product line that you're building, and you want to be able to...some of those have share certain components in what they're doing, but they may have slight variabilities inside of those components.

We can discuss that from an application level or we can discuss that because it's going on a different device -- a device with a touch pad versus a keypad, may be a variable in there.

How do you reuse the parts you can reuse but maybe write different drivers for different devices and different pieces like that? By building a product line where then you can take the variability and say, that's in a specific product and the commonality is all part of one component that you're building. So that was the fourth one.

The fifth one is to reuse efforts through cross-platform mobile Web application. Now, that's sort of a mouthful, but what we're talking about there is for some companies they're saying, we have iPhone, we have Android, we have RIM which is BlackBerry, we have other ones as well that come out.

Why not be able to build an application that feels customized for those devices but actually works across them?

And maybe it's a hybrid where it actually has some custom stuff for individual ones to some extent. I can give examples of these as well. But basically it's the ability to actually go cross platform across those different parts.

And the last one I want to talk about is understanding the quality needs. And specifically under quality I'd say the

security needs. And you want to be able to do this through static and dynamic testing and even runtime testing. So, static testing is actually the ability to check your code and see if you have any security holes, to see if the quality's okay, et cetera.

Dynamic analysis means being able to check, for instance, the Web site you're actually going to store this on and check the portals connecting between how are you going to transmit data around. And the third one is the runtime which actually means while it's running notice if someone is trying to hack into it while you're going.

So those were a number of different ways. And that's all six keys to accelerating development for mobile applications.

MATHENY: And Marty, our last question today. What solutions does IBM Rational offer for this Android Mobile Application Development?

BAKAL: Okay. So what solution does IBM Rational...?
Well, we provide a whole suite of different tools that really can help you. We do things like our Focal Point product, which actually is the product and portfolio management tools which allows you to prioritize customer needs and turn them into business pieces.

We also have things like our Rational Team Concert product which integrates with it which actually has the ability to actually show collaboration and configuration management and storage in an Eclipse [based] which mostly Android stuff is actually Eclipse based as well. So that's another whole piece here.

And we have Rhapsody, which is a model-driven development tool which allows you to do system engineering, and allows one of the keys which is understanding model and be able to reuse the pieces that you actually do.

And then a fourth thing we actually have is we usually have a number of modeling tools, RAD specifically, which actually allows you to target our WebSphere brand which is a separate brand outside of Rational, but target Web Services and build HTML 5 and Dojo and some of these other standards that are really helping you on cross-platform development.

And then the last thing we actually talk about is Appscan, which is the security based product which actually takes you and it integrates with our quality management RQM, Rational Quality Manager Product.

So I know there's a number of different products here and we call them all together the systems and software

accelerators, which accelerates development through the process. But there's a number of different ways. Depending upon which ones of these six keys you actually talk about there's actually a different product which can help you in that, depending upon where your pain point [is].

MATHENY: Marty, thank you so much for sharing your time today. Lots of great suggestions and offerings, and we really appreciate it.

BAKAL: No problem. Thank you very much for having me.

MATHENY: That was Rational's Marty Bakal talking about Six Ways To Accelerate Android Mobile Application Development, creating an integrated solution for collaboration among development teams.

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We'll post a link to the white paper titled, Ways to Accelerate Android Mobile Application Development to help you get started. This has been an IBM podcast. I'm Angelique Matheny. Thanks for listening. Keep tuning in as Rational Talks To You.

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