

Java technology zone technical podcast series: Season 3
Jay Garcia, David Evans, of Modus Create on building mobile applications
via web-based IDEs
Episode date: 12-06-2011

GLOVER: I'm Andy Glover, and this is the Java Technical Series of the developerWorks podcast. My guests this time are Jay Garcia, who is the CTO of Modus Create and also happens to be an author of two books for Manning, one being Ext JS in Action, the other being Sencha Touch in Action. And then I have David Evans also who is a senior mobile architect at Modus Create.

And I thought we'd talk today about, you know, obviously there are various ways of building mobile applications. You can go the native route or you can go, you know, the web route, so to speak, and obviously there's in-between hybrid routes.

I want to know, and I think our listeners want to know, you know, if you go the web route, there's a couple different players in the market, one being Sencha Touch, but then there is, you know, jQuery Mobile, then there's jQTouch, and probably myriad other JavaScript frameworks.

So why don't I just start the conversation by saying, you know, what the heck is Sencha Touch? And you've written two books. One's Sencha and one's Ext JS. What's the difference?

GARCIA: Okay. So Sencha Touch is a mobile framework that is based around the best web standards for targeting WebKit.

So when you have applications that you want to develop, mobile platforms, think phones, think tablets, and most likely in the future TVs, and what we learned at SenchaCon a few weeks ago, cars potentially. Sencha Touch typically is a platform for your day-to-day apps.

Ext JS, however, is built on the same platform as Sencha Touch, but is more targeted to the desktop web. So Ext JS is about five years old now, whereas Sencha Touch is just a tad over a year old.

GLOVER: And is Sencha...how is it related to Ext JS? Is it the same code base? A fork of it? Are there pieces that are similar? If you know Ext JS, do you know Sencha?

GARCIA: Absolutely. So Sencha back in late 2009, early 2010 decided to...when they began to develop Sencha Touch, they decided to develop a fork of the code of Ext JS called Sencha Platform. So they found all the commonalities between Sencha Touch and Ext JS and abstracted that into that framework.

So back when Sencha Touch 1 was developed, Ext JS version 3 was already on store shelves, so to speak, and they used Platform to develop Ext JS 4. And, likewise, they've improved Platform to improve Sencha Touch 2, which is currently in pre-release 2.

GLOVER: Okay. So, now, when I talk to various JavaScript and just development gurus, there seems to be a very large difference, let's say, between jQuery or j...yeah, jQuery Mobile...or let's just say...I'm going to take a step back. There's a big difference in the way that Sencha deals with a DOM as opposed to jQuery. Is this true?

GARCIA: Yes. I mean, I would say the culture entirely is different, including the approach to developing Web apps.

GLOVER: Okay.

GARCIA: With the different technologies. So if we would just focus on Sencha and jQuery, just names, not specifically what frameworks or what target devices, jQuery basically is a platform or a library that you use to add effects to web pages. You do things like you form validations. It's more Internet centric.

With Sencha Touch and Ext JS, they take an entirely different approach. Instead of just having your HTML and throwing Ajax on top of it, with Sencha products you typically develop from the ground up using their product. So that is you think about the DOM as basically a massive view or a portal into an app built with HTML5.

So it includes things like MVC, an entire class system dedicated to allowing you to develop classes using traditional methods such as mimicking Java-style package management and so on and so forth.

GLOVER: So how is this related, then, or different than something like SproutCore?

GARCIA: The stark differences basically are that SproutCore has a very, very mature MVC pattern or MVC library. It also includes, from what I understand, a server-side component to allow you to develop in a dev mode a lot quicker. And what I've heard are some rumblings about some really good Maven-style package management.

So also I've heard that SproutCore has an awesome binding system. So you have a data source and you have your view, and the bindings are just amazing.

With Sencha Touch, on the other side you have more widgets that you can use to just basically tailor to your application needs. It also has MVC which is maturing. It's not fully mature, in my opinion, but it is getting better. And the bindings are nice, but they're not as elaborate as SproutCore.

So with SproutCore, if you want to enjoy the bindings, make use of their MVC and have their server side, then that's going to be the right choice for you if you're developing HTML5 apps, because if you truly want to develop custom UIs, then that's going to be your choice typically, right, because you're going to build everything from the ground up.

With Sencha Touch, however, you could take an existing list and you could customize it. So a lot of the work is done for you and all you need to do

is worry about...is customizing existing widgets. So it kind of makes app development faster from the perspectives we've seen.

GLOVER: Okay. All right. And so when you talk about kind of development effort and whatnot, let's start from the basics. I'm a Java developer. Let's assume I know JavaScript. Do I need...is there a special IDE? You know, how does one get started with Sencha?

GARCIA: Absolutely. So with Sencha we basically encourage, like you said, in-depth knowledge of JavaScript. When you start to learn Sencha, the best place to go is the Sencha learn site, so it's sencha.com/learn. There we actually have our first screencast about Sencha Touch 2. But Sencha itself has been doing a very good job of developing their own screencasts and guides to enable new users to move forward.

On top of that, they have an amazing documentation system that is getting better with every iteration.

And, lastly, I would say in the community space a lot of folks are posting blog articles, and I typically would find those through Twitter or...sorry. Excuse me. Twitter, Google, or perhaps even Sencha forums. And then we also have Sencha Touch in Action which will be most likely the biggest and greatest in-depth guide into the world of Sencha Touch.

GLOVER: Okay. And this is obviously the book you're writing.

GARCIA: Right. So it's currently in the MEAP phase, which is Manning's Early Access Program, as they call it. And the URL for that is manning.com/garcia, then the number 2.

And the idea is that we have halted...we halted this summer the development for Sencha Touch 1 because news of Sencha Touch 2 leaked out. So after SenchaCon and the fact that Sencha Touch 2 is now in the wild, we are...actually had a meeting this week to reorganize the table of contents.

So we have myself as a coauthor, or the lead author. We have also Anthony DeMoss and one of the Modus Create management team, Aaron Smith, who also is coauthoring that book as well.

GLOVER: So when do you think that book would be available for purchasing in like Barnes & Noble type thing?

GARCIA: Gotcha. So we're targeting perhaps late spring, early summer, given the amount of knowledge that we actually have to put into the manuscript. And the fact that Sencha Touch 2 actually is also morphing as time progresses. The Sencha team is working extremely hard on making sure performance is absolutely right.

One of the things they did from Sencha Touch 1 to Sencha Touch 2 is they first focused on performance over features. And that meant that things inside of Android where the experience is absolutely horrible on a lot of devices with Sencha Touch 1 are absolutely more pleasant in Sencha Touch 2.

So we're doing our best to follow the development but making sure we're not writing so much that we actually have to refactor a lot of our manuscript, because, you know, the library may change.

GLOVER: Okay. All right. And you said something earlier that I thought was...certainly piqued my interest when you said at SenchaCon you were talking about just different devices and whatnot, and you mentioned cars.

GARCIA: Yes.

GLOVER: So what does that mean?

GARCIA: Ah. Absolutely. So the idea behind the new Internet...I don't even know if this is going to be called Web 3.0 or whatever. But a lot of companies that we're seeing are focusing on multi-device personality, I would say, migration, so to speak.

So imagine a place where you're playing a game on your laptop, you go on the train, you log in, you have the exact same session on your laptop...excuse me, from your laptop onto your iPad, and then for whatever reason you wanted to move that to your game while you're in the parking lot...to your car while you're in the parking lot. That's going to be possible.

They talked about things potentially where you make a search on your iPad and you basically tell your car find me this place, and you're able to use a UI built with HTML5 and perhaps integrating Bing or Google Maps to get directions.

So it's more of a high-level discussion, I guess, at this point because there are very few cars out there that are...that even have things like Bluetooth. I mean, you know, the technology being absorbed into cars is a very, very slow thing.

But what we're seeing is, you know, rumors for the past few years of an Apple TV, and I mean like a real Apple TV, not just a little black box that sits in a corner. And then, you know, we see Google trying very hard to push forward in that space.

So, you know, it may be in the future that you develop an app for the desktop using Ext JS and you can use Sencha Touch to have a touch version or mobile version for your TV, your car, as well as your phone or your tablets.

GLOVER: I see. So this kind of leads nicely into a broader conversation that...so obviously, you know, at Modus Create you guys are leveraging Sencha to build, you know, HTML5 mobile apps, we'll say. But, you know, in knowing David, you know, David's doing some native work as well.

So this is the age-old question. I have an app. Let's say it's...I have a game or I have...you know, I want to expose my legacy ERP system or I want to do like, whatever, a direction finder like you were talking about in terms of I want to find something.

Where do...you know, maybe I'm interested in Sencha so maybe I go there. But I'm sure there are use cases where it doesn't make sense to do something in Sencha and it does make sense to do it natively and vice versa. And what are those? How do people approach that? How do people answer question?

EVANS: That is the age-old question. That's the paradigm where we see we are right now currently.

People, you know, do they invest, do they invest their dollars, does it make more sense to invest their dollars into a native app or do they...do they...for the novelty, you know, or do they invest their dollars in dev web-based version of the application.

I guess if you already have an app in the app store, you have...you know, you have versions coming out. You have operating systems coming out every, I don't know, every six months, every year or so, right? Major releases.

And so this past one was iOS 5, you know, so some something are different from iOS 4, 4.2, 4.3, to iOS 5. Do you continue to invest your hard-earned dollars into keeping with up with the new devices' operating systems, or do you remove that app from the app store and focus solely on HTML5 web development from a developer's standpoint, not from a business standpoint.

It makes more sense to have these apps, all three, you know. I mean, Windows Phone is coming up too, so I would say all four. You have a native Windows Phone, a native iOS and a native Android as well as having a web-based mobile version of the application just to hit, you know, all the players, right? I'm a heavy iOS user. I'm a heavy Android user. I have both devices. I'm actually looking to get a Windows Phone here soon because these look...you know, I would...I can't wait to start developing on a Windows device.

So you have heavy, heavy users of the iOS, right? I'm sure you have an iPad. Jay has a few iPads. I have an iPad. I only use the iPad for certain things. Browsing the web is maybe, you know, like 10 percent, 20 percent of my time, but a lot of the stuff is going through a native app to pull content from the web and display it on a native and have the native experience.

We're spoiled. We're spoiled by an iOS device and the quickness and the speed of a native...a native experience. And then Sencha Touch is...Sencha Touch 2 is starting to ramp up the speed of the deliverance of the content in a mobile web page.

GLOVER: Well, so what is that impedance mismatch or when is there parity, I guess? You know, what...I've seen some HTML5 apps and, you know, they're beautiful. They're slick. And they can be made to look in a native fashion. But what's missing now? If...what's the killer feature that I have to go native or vice versa?

EVANS: I think for the most part...and I'll let Jay speak on this from the web side. I think for the most part it's just like...you know, it's all about speed. I mean, everything is real time, right? You go to Twitter, you real time, you know, a second tweet. It took a second. So you go to Twitter and you see a Tweet from the past second. Right? I mean, this is real time.

Before there was massive latency. And once you get spoiled and to having data come back so fast, right, you have to go back and switch up the architecture of some of these databases and go from RDMS to integrate that with some node.js or some NoSQL, right?

The whole infrastructure kind of needs to change. I mean, there's things that legacy systems that have been built and been around for like 10 years, now you're trying to leverage some mobile...you know, some mobile app and have the web service call that latency...latency system and there's a delay. There's a latency.

So it just needs to, you know...just speed, right? Everything just needs to be here now, here now, when we make calls and requests.

GLOVER: Well, what about from a UI standpoint? Jay, you mentioned Sencha has widgets and whatnot. Do these widgets emulate, you know, native things?

GARCIA: Yes. So the whole vector that...or approach that the Sencha guys took, from my perspective, when it came to developing Sencha Touch initially was to follow the Apple HID specs. And the interesting thing is that they were able to do pretty cool things like native like scrolling, touch scrolling, using some pretty awesome tricks with WebKit.

And they actually included some mathematics to add things like friction, spring, so on and so forth, because what they're ultimately doing internally is using the CSS 3D transforms in this X and Y space.

So I was just going to say the look and feel of the apps mimic Apple HID, but you could totally use CSS to transform the look and feel into a more BlackBerry style or perhaps even an Android look and feel of your apps.

GLOVER: Tell me more about CSS Animations. You mentioned this. What is that?

GARCIA: So CSS Animations basically is a tool to describe motion or perhaps transitions for items on the web page that are typically accelerated through the graphics engine in your machine.

So the idea is that with traditional Ajax, what I'm going to call effects, you actually...and thankfully the libraries did the hard work for us, but internally what they're doing is calculating what it would take to move one box from one side of the screen to another and literally would update the CSS attributes one frame at a time. And so it's very expensive from the browser perspective to do that.

And with CSS3 Animations, you can do awesome things, like actually have 3D transforms. So that is you can take a div and actually move it in the Z index space. You can take multiple items and put them in a matrix and actually make a 3D cube or even more in depth just with div elements or image elements and have it move in a space where you're typically, you know, not used to seeing on a web page.

GLOVER: Sure, sure. And so, you know, going back to the whole car and device analogy, you mentioned, you know, maybe I'm on my iPad or I go to my car and I say I want to go to this restaurant, find it for me, so right then and there there's some sort of notion of GPS or location-based services, which at this point is not part of, you know, HTML5, correct?

GARCIA: Well, it is for the devices that implement it.

So the problem with HTML5 is that, you know, so many people in my opinion have...I guess it's a good thing and a bad thing. So many people have influence into what the spec is supposed to be. I mean, it's not really fully hashed out.

I mean, we're not seeing things like validations fully hashed out in browsers, but yet we're actually seeing use of location coordinates. So that is you can actually use Google Maps on a web page in your browser on your phone and it...Google Maps knows where you're at and how to write specific places.

And what we saw recently with iOS 5, mobile Safari now has hooks into the compass. So you actually have positional awareness capabilities.

GLOVER: In the browser.

GARCIA: In the browser. And you also have pretty cool things like tilt sensing and so on and so forth. So you can actually rotate and tilt your phone. And ironically you can see this in Safari on the desktop with Macbooks where Safari and Chrome can listen to the tilt sensor and the accelerometer of your Macbooks.

GLOVER: Okay. That's pretty cool. But that's, you know, I guess somewhat browser specific. I mean, you know, obviously on the iOS you have a browser, right, and then on Android...so I guess, for example, is this something that Firefox supports or not yet or where does IE stand with some of this stuff?

GARCIA: The interesting thing about Firefox...and I love those guys; I've used Firefox for a long time. But, you know, the new kid on the block is WebKit. WebKit's a little bit over three years old and it literally has taken the web by storm. Google has embraced WebKit. Apple has embraced WebKit. RIM has embraced WebKit. Sencha has embraced WebKit.

GLOVER: Can we take a step back. What is WebKit?

GARCIA: So WebKit is an extremely fast layout engine. And basically the different vendors...so that is Apple and Google so far...have taken

WebKit and thrown in their own JavaScript engine on top of that from what I understand.

I'm not a WebKit expert, I'll be honest, but I'm a huge fan, I mean, and I didn't used to be. So anyone who followed me on Twitter knew that I was a Firefox just evangelist because I absolutely love Firebug. There are just certain things. I do screencasts online. I do things with Firebug that a lot of advanced folks have not seen.

However, spending a lot of time with WebKit and the WebKit debug tools, like I literally just use Firefox on the side now. I honestly just use Chrome or Safari because it...not only is it much faster, but the WebKit tools are in many cases a lot better for debugging and development.

So, you know, when it comes to IE, Microsoft has been trying very hard since IE 7, I guess arguably IE 7, to modernize their browser. And what you're seeing is that even today with IE 9 that WebKit-based browsers, Chrome and Safari, just blow away Internet Explorer in performance and as far as HTML compliance and so on and so forth.

Now, I think last...last I remember, IE had done a very good job of passing the Acid3 test, whatever the latest Acidtest is. So their compliancy for CSS3 is getting better. But, you know, from a dev tools perspective, IE dev tools are still atrocious. It's still very slow and not as capable as WebKit altogether.

GLOVER: Interesting. So, you know, David, you mentioned earlier about picking up the Windows Mobile phone. If I were to build, let's say, a Sencha Touch application, would it behave the same on iOS as it would on a Windows Mobile? Do we know this yet?

EVANS: We do not. But I'm sure it does. I haven't tested a Windows Phone. I haven't even held a Windows Phone, to tell you the truth. But it, you know...they're definitely gaining some ground in the space. And with it being mobile, I don't see why it wouldn't behave the same or similarly to iOS or Android. And Jay can probably chime in on this.

GARCIA: Yes. So I'll be honest. I have not touched a Windows Phone either. And the closest thing to a Windows Phone I've ever touched was a Zune, and that was like probably four years ago. I'm not kidding. It's actually pretty bad.

EVANS: Wow.

GARCIA: Yes. And, I mean, you know, truth be told, I've heard great things about the Windows Mobile phone. But ultimately the truth is that the best mobile development, and Sencha has recently posted an article about this, is still happens to be iOS. So mobile Safari.

And it's anything from JavaScript to things like, like I said, the compass support and so on and so forth. So, you know, WebKit continues to push the envelope. And the vendors...like I said, a lot of investors are focused on WebKit.

And the only thing is, the sad thing is, that, you know, Microsoft I think needs to recognize that they are not the king anymore and they have not been the king for 10 years on the Internet. So IE 3 was I think their last big reign as far as good browser. And that's pretty sad, I know. Anyway. Sorry. I went on a rant there.

GLOVER: No, it's all good, it's all good. Well, I think to that extent it sounds like Firefox needs to catch up as well.

GARCIA: Yeah. So the sad thing about Firefox and the whole Mozilla team is that in my opinion they actually turned their backs and they became a Microsoft. They slowed down and became complacent. And what we're seeing now is that they're trying do things that mimic I guess things like Google.

So, for example, one of the things that really irks me about Google is that they don't use traditional version numbers. So every release of Chrome is now a major version. And it just blows my mind, because, you know, from new user perspective, you think, holy crap, you know, Chrome 12 or Chrome 16, wow, that's awesome, then, you know, IE 9? What do you mean? Just IE 9? So they totally invalidated many, many years of a versioning system paradigm that a lot of companies followed.

So the Firefox team said, yeah, this sounds like a great idea, so they went ahead and implemented that, that exact same thing. And then they want to go a step further and do sell and updates and so on and so forth.

You know, they're definitely behind the curve. Their layout engine is not as fast. XUL, like not many people really use that anymore, from my perspective, maybe because I'm focused on WebKit now. But, you know, they need to step up their game. And they recognize that.

And, in fact, I actually went to a...I found a link on Twitter about some cool things about Firefox. And I clicked it, which my default browser is now Chrome, and what popped up immediately kind of made me a little sad, because it was a dialogue expressing the fact that I'm using a browser that was designed for profit, which is arguably true, you know...

...where I should probably be using a browser designed, you know, purely by a nonprofit organization. So I said, you know...all I could think to myself was like, wow, you really went that way. Okay. Like, okay, we have to go there. Awesome.

GLOVER: Nice, nice. Well, so, I mean, this has been super interesting. I think these are obviously interesting times. The amount of kind of choices one can make with respect to...I mean, think about just this conversation alone. We've mentioned, you know, at least three to four different device platforms.

We talked about browsers, right, that we mentioned four of them. You know, we didn't even mention Opera or anything like that. And then we also talked about JavaScript frameworks in general. Sencha is just one of the few.

And I think in some ways it's the paradox of choice, right? You know, back in the day, you know, you didn't have many choices, so it made it kind of easy to, okay, I've got an idea, now I can implement it. It may have cost you a lot more then.

But so now I just...I wonder, you know, so given all these different choices and paradigms we just talked about, is there...maybe we'll finish up with this, you know, what is your superior stack? If I was going to begin today and I wanted to build, let's...aside from whether I go native or not, but what's the stack one would go on if they had a great idea for an app?

GARCIA: Okay. So definitely the choice needs to be made on whether they are doing things like 3D. And I mean like full-blown 3D. So you think about games and whatnot. If it's tons of data...so 3D and tons of data, then you definitely want go native. With Sencha Touch, the one thing we didn't, I'm going to say touch on...

GLOVER: No pun intended.

GARCIA: Exactly...was the fact that you can use things like NimbleKit or...okay. Yes. So, yes. Apache Callback. That's right. They were donated. Okay. Anyway.

So the thing we didn't touch on was the fact that you can package Sencha Touch or HTML5 apps...I'll just put, make it very generic, HTML5 apps for distribution. And you know, the biggest technology for that right now seems to be PhoneGap in the HTML5 world. Or, I'm sorry, now Callback, I guess it is, from Apache now. They were donated.

And there are some new players like NimbleKit. I know that Sencha is using that for their SDK Tools. So the idea with Sencha Touch is you can download their SDK Tools and custom package it. But, you know, so you have the capability to enjoy a native-like experience using HTML5 apps on your HTML5 client or mobile devices.

So, you know, if you have an app that is relatively simple...think about like a menu system, right, you want to search for restaurants, you want to look at menus, you want to order stuff, takeout...there's no reason why you have to sacrifice developing it in specific technology like Objective-C and then do it again in Java and then looking at deploying on WebWorks and then on IE....

Or, not IE, but Microsoft's whatever they're using, Objective-C. Sorry. I'm so far removed from that. But the idea is that with HTML5 apps that you can ideally develop it once and develop it across platform using a packaging system.

So this is where we dive into the world of what's called hybrid apps. So with the packaging system you have access to native APIs, and things like Callback allow you to access things like the camera. Audio recording. I mean, the limits start to become pretty...the lines become blurred when you start thinking about that packaging HTML5 apps with the package

manager instead of just deploying it just through the Web because you could just do a lot more.

So ultimately, you know, when you decide on what you're going to do, you have to figure out what costs and risk factors you plan on taking. So ideally it's cheaper to develop stuff in HTML5 using a technology like Sencha Touch or perhaps even SproutCore and deploying it using a packaging system rather than having a large team focused on native-style development only just to deploy it to multiple platforms.

And that's pretty much the customer base that Modus continues to find, is the customer that perhaps even has developed once in iOS wants to extend over to Android, realize, holy crap, I have to do this from scratch all over again? Wow.

So there are some native tools, I think, like Appcelerator that allow you to do it in a simple package management system where you're not doing HTML5 but you're using their out-of-the-box widgets and it compiles to native code.

But, I mean, the world has moved to HTML5. I mean, Microsoft claimed HTML5 as a winner. Adobe recently claimed HTML5 as a winner. I mean, it is the world of HTML5 now. HTML5 will continue to push the boundaries. And, who knows, I mean, early 2000 people talked about refrigerators having screens and whatnot. That may be an HTML5 app, dude.

GLOVER: Yes. I think you're right. I think you're right. Well, this has been awesome. So how can, you know...you talked about your books obviously, Jay. How can people follow, you know, you, Jay, and you, David? Where can they learn more about you guys?

GARCIA: Sure. So for me it actually becomes really simple. You can just Google J-a-y space Garcia. And I'm typically at the top. Thankfully. I've been working very hard on SEO. But on Twitter I could be found with the ID of underscore J, as in Jay, DG. So it's my first, middle, and last initials. And my e-mail is jay@moduscreate.com.

GLOVER: Awesome. David?

EVANS: You can find me on Twitter on occasion at A...at A2D37. That's A as in Apple, 2 as in the number, D as in David, 37. And david@moduscreate.com is the e-mail.

GLOVER: And you all...you know, because I actually missed this training session, but I'm aware that, Jay, you give...you do a lot of training around Sencha. When's your next big public class?

GARCIA: Oh, that's a good question. We are targeting perhaps early January now, although it's most likely going to be in the Washington, D.C., area. Although, we are toying with the idea of doing a New York City and perhaps maybe even like Chicago area training. So we're trying to figure out the best way to spread the knowledge. I mean, ultimately we're Sencha evangelists and we want to continue doing that.

So the best place to find out information is going to our website, moduscreate.com. And, you know, if you want to contact any of us, there's definitely a nice contact form there that we monitor pretty much all hours of the day. It's awesome.

GLOVER: Very cool. Very cool. Well, this is awesome. So I wish you all the very best of luck.

And, again, my guests today have been Jay Garcia and David Evans of Modus Create. And I'm Andy Glover, and this is the Java technical series of the developerWorks podcast. Thanks for listening.

[END OF SEGMENT]