

Connecting your SAP Applications to your Supply Chain

An Interview with John Radko—Originally Recorded on Trading Grid Radio

Steve Keifer: Welcome to Trading Grid Radio, my name is Steve Keifer and I am your host for the program. Today we are happy to welcome back one of our former guests, John Radko. John is the Chief Technology Strategist at GXS. Welcome back, John.

John Radko: Thanks, Steve.

Steve Keifer: John, we brought you on the show today because we are doing a series of podcasts around the topic of ERP projects and B2B integration and specifically wanted to get your insights regarding SAP and how some of the customers that you've worked with are connecting their B2B environments into SAP. I thought that maybe you could talk about some of the best practices that you currently recommend. Do people connect their SAP application directly to their B2B Gateway or their out-source B2B environment or do most companies you see typically go through EAI or other middle-ware platforms.

John Radko: Well, that's a good question and I think it may change over time, but for now SAP is one of the few application suites where people do tend to connect directly to B2B gateways or cloud services. And I think the reason for that is some of the connectivity methods to SAP provide status information on B2B, it's what's called the SAP EDI subsystem. There's a set of statuses that, when leveraged by B2B teams, provide their end users (their internal clients within their company) the ability to see the status of the business processes without having to work through some kind of separate interface or disturbing the B2B team for help. Where I do see the use of middleware or EAI is where clients have implemented some kind of internal integration on a process that's relevant for B2B, but that is a very rare case because SAP customers frequently keep all of their process stuff within the SAP suite itself, so the general pattern is to see people integrate directly.

Steve Keifer: Interesting, so I guess my next question would be if they're integrating directly, their B2B infrastructure into SAP, what are some of the different options that they have and what are some of the pros and cons of those, I mean, do they use FTPs or some specialized connectivity that SAP offers?

John Radko: The most common, which is specific to SAP, is something called ALE. ALE is a combination of a protocol and data format using IDoc. And folks who are familiar with SAP, IDocs are their internal formats and there are really two large families of IDocs. There's the traditional IDoc, which look a lot like EDI documents, and then there are the XML IDocs, which are quite a bit larger and are, not surprisingly, in XML. And using ALE, you can submit those documents into SAP and there are a number of reasons to recommend this, because when you combine the data formats, you get a lot of error checking and you also have that statusing I was talking about earlier. So, a lot of our clients really like this. Something to be aware of, kind of a gotcha, particularly with younger middleware stocks and with anything that leverages the XML IDocs, is if you're given very high volumes, you may exceed the capacity of the SAP libraries to handle large transactions that are coming in via XML. That's because when the documents are rendered into XML, they can actually consume the available resources. Now, this is not a bug in SAP. SAP does not view the ALE interface as a batch interface for importing large amounts of data. They view it as something where you would be more

on a transactional basis. And it works extremely well for that, so it's not a flaw, it's the usage of large batch inputs where you would be better advised to maybe do an FTP over VPN, get it on the file system, and then use RFCs to load the data into SAP. And there you have a lot of control; basically you do a batch load. Now when you do that, however, the con of that is you don't get all that free statusing, so you have to set a lot of statuses yourself or you lose SAP's internal statusing. Now the newest player to the game is what's called XI or PI, and this is SAP's own middleware layer. And SAP is new to this space but it's a very respectable entry, but the way to think about XI is essentially as middleware. So it's not aware of the application server, it doesn't set the EDI-B2B subsystem statuses, so really think of it the way you would think of any middleware layer. So you would be advised to use XI if you were using that for all of your internal processing and connectivity and you didn't want to use ALE because XI would definitely give you a little more control in management than using FTP over VPN, but it's still not going to give you all the free statusing and surround of ALE. Also, depending on how you implement it, you'll have to be careful to make sure that it can handle the larger files.

Steve Keifer:

Excellent insights. It sounds like you've had a lot of good practical experience helping clients with making decisions about the best way to do it. I'm curious, what are some of the most significant implementation challenges you've seen clients facing, and maybe give us some specific examples beyond what you had mentioned earlier?

John Radko:

Sure, sure. One obvious example is LOAD. So if you tend to get bursty data, like for instance a client that does business with one of the largest retailers in the world. When they're doing normal transaction volumes like orders and invoices, everything is fine, but they have a lot of SKUs and when they do catalogue updates they can literally run the risk of overwhelming their SAP connection. So you have to configure this particular client using ALE, so we run multiple ALE bridges to the client. Now when you're doing ALE, there's a load balancing system within SAP itself or you can go direct to the application server. So you have to be very wary of peak volumes because you don't want to overwhelm the interface. Another example pertains to the difference between those IDocs: the EDI IDocs are quite a bit smaller and very efficient in loading, the XML IDocs are more flexible, but they expand quite a bit. And one trick that most people don't know is if you're using commercial software, someone from a major middleware vendor or an ESB vendor, they may convert a traditional IDoc into an XML IDoc under the covers and that can cause heavy resource consumption, and so if you see a lot of resources getting chewed up and you can't understand it, you may want to ask what SAP libraries your vendor is using. Another thing is you've got to be very aware of the customization that was done to your SAP system and understand the data formats and how that customization impacts your IDoc. Another major thing to worry about, actually this is a good one, this is a bit surprising: the B2B subsystem in SAP is very sensitive to order, so frequently statuses of B2B messages are sent asynchronously. So under certain rare cases they can arrive out of order. So, for instance, we do translations for a lot of clients in managed services. If we were to just send statuses when the event occurs, we might send a beginning translation and an end translation, and if somehow the end translation got there first, the beginning translation would override it even on the same document, if that makes sense.

Steve Keifer:

Yea I would never have thought of that, but great point.

John Radko:

It's tricky, so one of the values we provide to our clients is to make sure that we only send translations in the correct order because once you get out of sync in the SAP system, it's hard to get it back in sync. And I'm sure there's a reason for that, but the key thing is to just make sure that those

messages arrive in the proper order before they update, or you could be getting calls from your internal customer asking why something is stuck, when, in fact, it has gone all the way through. In that instance, if you had a delivery and then something else came back, like a completed translation, it would override the delivery so that it would look as though the document was waiting after having been translated—when, in fact, it had already been delivered. So those are some of the tricky ones. Another tricky one with SAP always involves testing. It can be very tricky to test large scale SAP implementation at load, so frequently people who leverage extra capacity off hours to test. That's how we work with that really large client working with the big retailer. And another thing to be wary of is SAP is really tuned towards regular updates, not necessarily real time, but if you're doing a once-a-day large update, you really want to be careful with that because you can overwhelm it. The folks at SAP are big proponents of the real-time supply chain and keeping information flowing continuously, so they've done a lot of work to make that work well and that's why I say it's not really a bug; it's a design model. So particularly with the ALE, if you keep a continuous stream of data going on you are likely to get the best result.

Steve Keifer:

Well, John, you have certainly given us a lot to think about. I had no idea that there were so many different options for this and so many different things that you needed to consider before making a decision. I'm sure listeners will appreciate the best practices you've offered.

John Radko:

My pleasure.

Steve Keifer:

Well I appreciate you coming on the show and we look forward to having you back again here in the near future to talk about SAP integration or maybe one of the other interesting topics that you're looking at.

John Radko:

Okay, sounds great, thanks.

Steve Keifer:

And thanks for everyone listening in; hopefully you will join us on a future edition of Trading Grid Radio. <http://www.gxs.com/tradinggridradio>



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