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# OPUS Reports and Dashboards



### Reference

Link: <https://www.tracelink.com/resources/tracelink-university/opus-solution-designer-foundations-presented-futurelink>

**Saurabh Calla:** Hello, everyone. Saurabh Calla, product manager at TraceLink now for going on seven years. I've seen a lot of changes over that time, and I'm so pleased and honored to be sharing with you reports and dashboards, the product that I'm working on now.

I want to thank you for your time today here with us. I want to congratulate you on picking the best track in TLU.

[laughter]

**Saurabh:** You made the right choice. I also want to thank Bob, Jerry, and LJ, Jeff, Siva that came before because I get to stand on the shoulder of giants. They built this amazing platform, all these capabilities that you've seen. Now you'll see reports and dashboards on top of that. We'll jump into that.

Reports and dashboards. You've got the data coming in, no matter what format it came in on, UI, file transfer, etc. Now you've got that data, you want to do something with it. You want to visualize it. You want to see it in different ways, in tables and charts, reports and dashboards.

There's three key pieces, query objects, reports, and dashboards. We'll go through all three throughout this presentation. At the heart of it is when you're visualizing this data, we're not going to make you write code. This is intended for business users, maybe business users plus when you get into query objects.

You get in and you know you want to generate this visualization, you know the data you want to generalize it from, and we just give you those options, you select those, and you're up and running. Like I said, business users can leverage reports and dashboards to gain that supply chain insight to support informed decision-making.

They're the ones coming in, they have insight into their processes. They know they need to see data in a specific way. Those transactions are flowing through TraceLink, and now they have an easy way to go and find that data, bring it up, and visualize it.

Additionally, partners also get access to those reports and dashboards that the owner allows them to. Imagine being able to sit there with your partner, look at the same data at the same time to make those business decisions to solve those supply chain problems without

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having to wait days or weeks or giving them access to specific information.

You pick the dashboard or report you want to share, and you enable that sharing. We'll go into some of the details, and then we'll build up from there. Then we'll also have some demos here showing how this works in real life.

Query objects exist at the base level. There is where you identify the objects, business objects, the ones that we've been talking about all day long. This is where you identify the type of data you want to get back.

Do I want to get back data just about purchase orders, or do I want to see advanced shipment notices related to purchase orders, related to invoices, bringing that data back together?

Once I have my query object identified, then I can get to the report level. At the report level, I'm selecting the query object to say, "My report is going to focus on advanced shipment notice and purchase orders."

I'm going to select that query object, and now I get to visualize that data coming back as a table. We'll look into how you can set up that visualization and how fast it is.

Then finally, you've got these reports, and they're great -- tables are great. I love tables. I love Excel -- but I want to visualize that as a chart. I want to see trends. Not only that, but I want to see multiple pieces of data or streams of data all in one place. I want to see my POs with my invoices and maybe with my forecast. That's where the dashboard comes in.

In the dashboard, you're bringing in one or more reports into the dashboard, configuring it, and then allowing you to see all of that data dynamically in one place. Starting at the base level, just a level set here, query objects is where you start.

For TraceLink and what we're doing with what Jeff mentioned with the catalog, we will be providing standard query objects, reports, and dashboards. You don't have to feel that pressure of, "Where do I start?" You'll have a place to start, to jump off, and start creating your own reports and dashboards.

Query objects, many will be defined ahead of time so that as soon as you get in, it's ready to go for you. They serve as a cornerstone for generating our reports and dashboards that we talked about. You associate primary, secondary, tertiary, quaternary objects from an application.

We're going to focus on MINT, but you can imagine this is a framework that the team has worked very hard on where you can get master data, you can get in the future compliance reports, APT. Any application that's coming, we'll be able to leverage this because we're based on the OPUS platform.

We have an open framework here to pull in all that different types of data because everything is modeled. It's going to make it very easy to create reports and dashboards that we can't even think of yet because it's based on the OPUS platform.

When we're creating the query objects, you can create it from scratch or you can pull the ones that we provide out of the box for you. Now, once you have that query object in place, we're going to jump into the report criteria, and it has two parts.

With reports, you have two parts. The first is the report criteria. This is where you're telling the system the data you want to pull back. That's defined through the process network where you're saying, "I'm picking this particular process network and one partner. I only want to see data about them."

You're picking filter criteria. You're saying, "Give me only my ASNs that have a delivery date in the next month," or in the last month, if you're looking back in time. You're also selecting

your columns where you're able to say, "I just want to see these five columns, delivery date, my item information, and the delivery number."

That's the data that comes back and that's available to you. You can go in and keep changing it, and you can keep adjusting it, but this is where you get to lay down that base level for the report for the data that you want to see.

Then the really cool part comes in. You've got the data. Now you can act on it. Once the data is retrieved, there's a host of number of operations you can do, some of which we'll cover here. I can quickly hide and show columns. I can filter directly in the table itself and find the exact record I'm looking for. I can do group bys. I can do pivot tables.

I can do computed columns, which we'll show as well, doing really fast computations on the data that's returned, averages, sums, etc.

As all those operations are happening and as I'm making changes, I'm not going to lose them because I can save it. Every time I come back or another user comes in, they're getting the same view of that report.

If you want to, we will have the capability where you can take that report, copy it, and customize it at the user level. This way, you can have your own copy of the report. Same thing with the dashboard.

Movie time. We've got Sierra. Sierra has a report builder role. She's able to go in, create reports, create dashboards, make adjustments, and make those available for her users and herself.

She wants to create a report for comparing her ASNs that come in, the delivery dates against the purchase orders to see if there's any discrepancy. She can do that in the past to understand how her vendors are performing.

She's going to leverage the query objects which we talked about earlier. She's going to create the new report, set up the filter criteria, and then change the look and the feel of the report for making sure it represents the needs of herself and her users.

Here she is. She's landed on the query object search page. She finds the query object she needs. We're just going to display it. Here, you've got the app, you've got the query object selected, and you've got your information.

Quickly pause here. Here, you can see her primary object is that ASN. You can see her secondary object is the purchase order. This is already ready for her to use, so it's going to come available for her out of the box. Now she's going to come to reports.

Here's the company reports that are available to her to look at, but she's going to create a new one. This is the same look and feel you've seen throughout the day. She's filling in the name, the description. She's picking her query object. It's a simple drop-down. She wants the latest version of that query object to operate on, and she's good to go.

She hits save, and now she's into her report. She's going to click report criteria. First thing she does is select the network, external manufacturing here. She can pick one partner or all her partners to pull data back for. She's also going to grab a filter. She's going to use the delivery date as a filter she wants.

Then here, she got the date picker. She can pick last six months, she can pick a custom day. It's ready to go right for her. Now she's going to select the field she wants. This is all type ahead and drop-down. She can quickly go in and pick the fields not only from her ASNs, but from also her POs.

There's two streams of data meeting in one place here, and I can pick and choose which data I want to pull back and show into the report. We're going to jump ahead. She's picked

her fields, and she hits apply, and the data comes back. It's got the mix of the data, the ASN and the PO in one place.

Now she can start manipulating the look and the field. She sees this item column and she doesn't like all the extra text that was in the ASN, so she's going to hide it for the time being. She can also move the delivery date around so it's more to the left, more visible to her.

She can make changes here. She sees PO number. She wants to really see the data by the PO, so she's going to make that a group by. She's got her two POs here. She expands one. There's her deliveries that are happening against that PO showing the delivery dates, the expected delivery date, and the actual delivery date, along with the item information in there.

She kills the group by here. She's going to use our computed columns. Here's all the columns available to her. She's going to grab the delivery date for the ASN. She's also grabbing the operator. It's all drag and drop. She's not writing any JavaScript.

Now she's putting in the delivery date for the PO, and boom, she's got the calculation for the difference in the delivery date. You can do that with dates, numbers. There's multiple operations. Once she adds that column, it's available in the report forever until she decides to remove it.

She wants to give it a better name because the name that comes out of the box is not appropriate. Gap in delivery is what she's going to name it. When she sees this report or her user sees this report, they'll see the same way.

She's going to go ahead and click save. Now she has her report ready to go and her users have this report ready to go. They can come in and adjust it as needed.

I'll just pause here for a second. We went through a few of the operations. You can rename all the other columns. You can do multiple levels of group bys, so you can see it from PO, to product to delivery date, whatever permutation is appropriate for the data you're working with.

Here, we're working with ASNs and POs. You could be working with invoices and POs. It depends on the profile of the data. You also have the profile of the data that is what the business user knows. Then all the flexibility is within reports and dashboards itself for them to configure the report how they see fit.

We've talked now about reports. Like I said, tables are great, but eventually, you want to get to a point of visualizing it, bar charts, pie charts, etc. This is where dashboards comes in. what dashboards provide the capability is that a user can take those reports that they created before and turn them into those visualizations.

A dashboard has one to end what we call dashboard elements. Those are essentially reports visualized on a dashboard either as a mini table, so the same table you saw but just inside of a dashboard, or as a full-blown chart.

You can have the same report in the dashboard multiple times. It can show up as a chart in one place and as a table in one place, and you can compare back and forth between the two. As we'll get into in the demo, it's very snappy. If you don't like something, you can remove it, add a new one. It keeps the state, so you can keep on experimenting until you get to the dashboard you want.

Then these charts can be further configured because you can adjust color, chart style, legend, etc. however you see fit. All of those customizations are per the chart type. Pie charts will be configured differently than a bar chart, which will be configured differently

than an area chart.

Then once this dashboard is saved, then the users can interact with it, and they can go in and filter the data, but you have the ability to control who gets to edit. We mentioned report builder are the folks that are going in, creating these, making them available, making edits. You could also have a report user role, and they're just visualizing it.

They can still make all the changes that I was showing you inside the chart, but those are not saved. It's for their own personal view and their own personal problem-solving efforts and tracking down data, but the report builder is the one who's setting it.

You don't have to worry about your chart blowing up on you under the covers or your dashboard suddenly getting a different change of layout because you can control the access.

The builders go in and they enable the end users, and one of the key things they can provide the end users is the ability to filter the data. You can structure it to have multiple reports represented as tables or as charts, but you also want to have the ability to filter that data in specific ways.

The builder is providing that capability. You get the process network and partner you see there, that's going to come always. A user viewing it will say, "I want to see the Munro partner information," or, "I want to see a different process network because I want to focus on that area."

The reports and dashboards are very responsive, just the data location is changing. It's coming from one process network or a different one, or from one specific partner, or all your partners in the process network.

Then the key thing here is the dashboard filters, where I can wire up -- and we'll see this in the demo -- I can wire up filters on strings, numbers, and dates, and I can connect them to different reports that are represented in that dashboard.

I could be updating a delivery date and seeing my ASN dashboard element get refreshed, and seeing my PO dashboard element get refreshed, and they all get the update at the same time. Then the whole dashboard gets repainted now with your filter in place.

It's a quick way where you have all these streams of data in one place where you can make a few edits to get to the information that you need quickly.

Sierra's back. Now she needs a dashboard, and she wants to monitor multiple sets of data. She wants to see her advanced shipment notices, purchase orders, the report we created earlier, and also inventory balances, and maybe also purchase acknowledgments.

She's going to take that report created earlier and she's going to bring it into an existing dashboard, make it available. Then she's going to set up filters so users can refine that data on the fly. She's in her dashboard search page. She's going to hit new, fill out the name and the description. She's a very fast typer.

[laughter]

**Saurabh:** Now she's already set up with one section where she can start working right away. She clicks a button here, and you notice the author, the green bar's back. She's setting a name for this section.

Now here she is, dragging and dropping, as she's been doing all day long, grabs the ASN and PO verification report she created earlier. She drops it in, and there's the data. There's that report. It's the same one. Now she just toggles and she gets to view it as a chart.

Here's a bar chart. It's trying to pull back the information and show it to her. She says, "I need to make a little bit of adjustment here." She's going to edit that chart. She can see



there's a pie chart. No, that does not look good. Sideways bar, nope. Don't like that one, either. Not that one.

I'm going to stick with bar. She notices that it's doing it by the gap in the delivery date. That's the new column she had created. She does not want that. She wants to see the quantity. She's going to get rid of that gap in delivery column that she had created as the series.

She's going to add a different series. She's going to add the quantity. There it is, all right in the browser, real time, being able to make edits. She can also go in and customize all these different types of settings, sorry about that, including chart style.

She can also toggle anytime back and forth. The data is just there. It's just how we're visualizing it, and it's very responsive and very snappy. Now she's going to go ahead and select that outer frame because she wants to add some more charts. Because it's a dashboard, she wants to see multiple things in the same place. She's going to add a new section, and there it is.

Now she's going to configure that. Instead of seeing just one chart, in that place she wants to see two side by side because it's going to make more sense to her users. Now she'll go ahead, and again, drag and drop. She's going to grab the reports she wants. She's just going to drag them over.

Inventory balance and PO acknowledgements. Boom, the data comes back, and now those reports are there. She can leave them as a mini table or she can convert them to a chart. By clicking this one, she converts that one to a chart. Now she has the layout she wants.

She's going to add in her filters. She'll go ahead and select the process network and the partner selection, and she'll define her filter. She's got date selected. Delivery date is the name she wants to give her filter. She connected it to the ASN delivery date. That filter affects any report that has ASN on there by the delivery date.

Here, she sees all the information. She's in the view mode now. This is what her user would see. Then she can click filter. This is what the user would do. They've got delivery date as an option, so they go in. Here's that calendar picker that came out of the box from earlier. They're going to pick a specific date, the 16th of August. She hits apply.

The whole page refreshes. Just that element was affected. Now you see it's just the one delivery that came back in the results.

We snip some things here and there so you don't have to see me typing and doing all of that, but everything else, you can imagine, it's all being rendered in the browser real time. I'm dragging and dropping. I'm changing different things about my reports, my charting, and it's taking effect right away.

Now to summarize, let's go through what we've learned today. Administrators configure critical insights. This is the role of the report builder. They're setting up query objects, reports and dashboards that provide that essential supply chain insight for informed decision-making.

They're setting all those things up to enable themselves and their users who are business users to get access to the data as they see fit.

Dashboards visualize orchestration data. Dashboards are providing a clear view of the information across process networks for actionable insights. Additionally, dashboards are bringing together multiple streams of data in one place across all the different transactions that are coming through the system.

Easy access to reports and dashboards. This is where you provide a role to the users you

want to be able to create reports and create dashboards, and you provide roles to those users who only need to view the information and just manually manipulate the UI without creating brand new ones themselves.

Reports criteria are configurable. You can really get in there and tune how you pull the data back, and you can tune how the data is presented because that's really important for reports and dashboards. You want to see the data in your context and in your use cases.

The dashboard structure is predefined. They have the elements and the visualizations out of the box. We just played with a few of those chart options, but if you scroll down further on the list, you can see line charts and area charts, and you can configure color and you can configure all of the different settings so that it displays in the right form factor that you want.

Then you can go from the dashboards into the report. If you're sitting there, you're looking at a dashboard, and you filtered it but you still don't have the right information, you click the name of the report and it takes you over into the report. Now you've got the tabular data and you can drill in further.

Those kind of capabilities are already in production or are going to be in production fairly shortly. This is my last slide. I'll leave you with that. I hope you get in there, I hope you play with it, and I hope you provide feedback because the team worked extremely hard to make this available.

[background music]

**Saurabh:** It's in production now. We're looking for all of you guys to get in there and play with it so that we can keep making it better for you.