Video 36

We have looked at how we can create reports and dashboards using excel. But of course there are many other business intelligence tools besides excel. Excel itself, while it is a great tool has some limitations lots of times because it cannot handle large volumes of data. There are specialised business intelligence tools that come to use on transactional databases that can be very very large in order to generate metrics and inference. If you look at the business intelligence technology stack, you can look at the the different types of tools in the technology stack. Starting with the reporting layer which usually deals with tools that can generate thousands of metrics. On top of that, there is a discovery layer where you can actually ask questions of the data and generate your own metrics. A dashboard layer that talks about the ability to create aggregations of data and metrics in order to come up with key metrics important to management and then eventually and increasingly nowadays, BI tools also have a predictive layer which allows users to sort of make basic predictions based on the data that is available in the BI tool, based on the data that is available via the BI tool.

So what happens in the reporting layer? Typically, reporting is static metric reporting. In other words, these metrics are predefined and users will simply get a report of what is happening with each of

those metrics but may not be able to interact with the system. OLAP tools and reporting tools like SQL server or Actuate are examples of BI tools that have reporting capabilities.

The next layer is the discovery layer and discovery is when users interact with the tool to ask questions. So the discovery layer is when querying and data processing is involved. Data discovery tools have a strong component of search and visualisation. Examples of data discovery tools include things like QlikView and tableau. Above the discovery layer is the dashboard layer and typically in dashboard, there is a high level of interactivity. The difference between discovery and dash board is shrinking so that a lot of discovery tools also provide dashboard functionality. So things like tableau that we looked at, microstrategy and SAS VISUAL ANALYTICS are all BI tools that also offer a dashboard layer.

Finally, increasingly, a lot of BI tools are including a predictive layer which because the same user sometimes may have a reporting requirement but sometimes may also have a predictive requirement and increasingly when you have access to all the data, a user is not content to simply look at what happened, they also want to know what will happen. So tableau or microstrategy for example include predictive layers in their BI tools. You can do basic data science algorithms using the same BI

tools but of course there are other tools like SAS or R or COGNOS that offer a much more varied and strong predictive layer in terms of analysis.

Ultimately, a company could use multiple BI tools and multiple statistical modelling tools. Irrespective of the tool that is being used, as a data scientist, you should have the ability to set up your analysis framework in the right way so that right questions are being answered in the right time for the business. The tool in some sense, this simply a means to an end and it should not matter which tool you are using as long as you know exactly what needs to be done, what metrics need to be looked at and what sort of analysis has to be performed in order to help businesses take smarter decisions.