



Emerging Business Intelligence Trends

Whitepaper by
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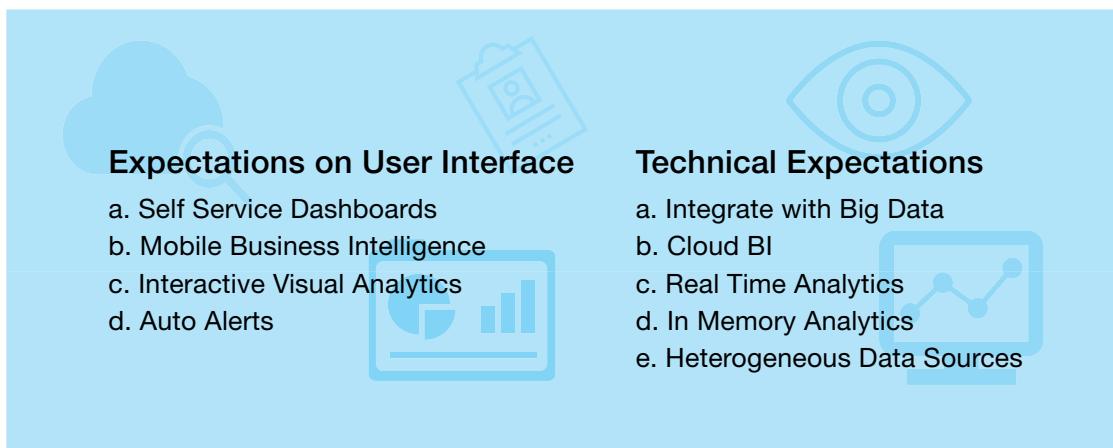


Emerging BI Trends

Business Intelligence, Reporting, Dashboards, Analytics, Visualization ... etc., all are interchangeably used terms in the descriptive analytics world. This area has never been more exciting. The past few years have witnessed some game changing analytics use cases, new data sources, new devices and more innovation than ever before.

While there is a lot of buzz around the ever-growing data, what matters at the end of the day is how can organizations separate the relevant information and derive actionable insights. This is where the role of analytics becomes even more important. Business analytics is increasingly becoming a vital driving force in organizational decision making. Creating easy to understand and quickly accessible reports for decision makers is a critical functionality needed in data analytic tools.

The analytics users' demands and expectations from the BI tools have been growing and thus creating new trends in this area. This white paper lists these demands and expectations.



User Interface Features

Self-Service

Self-Service reporting is the ability to create reports and dashboards by the users themselves, without depending on the IT experts and respective process. Self-service reporting is an approach to data analytics that enables business



Business Intelligence (BI) tools help a user to be self-sufficient in all sense.



users to access and work with corporate data, without much experience on the

BI tool. The tool needs to provide intuitive user interface, such that a business user can create the reports of her own with little/no support from IT.



Typically, the business users know the data well. They need basic training on the data warehouse and marts, respective data model and how to query the data to make data-drive decisions to solve business problems. Some BI tools provide features to create and store the datasets on the tool itself. IT creates and maintains these datasets (also called cubes) and users can create reports out of them. In this way, you could also safeguard your database from bad queries.

Mobile BI



Those days have gone when users wanted to access the reports on web and emails. Today, many users want agile analytics. Top managers want to access the dashboards on mobile devices and tablets on the go.

Although the concept of mobile computing has been prevalent for over a decade, mobile BI has shown a momentum/growth only very recently. This change has been partly encouraged by a change from the 'wired world' to a wireless world with the advantage of smartphones which has led to a new era of mobile computing, especially in the field of BI.

This feature enables the information access from anywhere and the users are always informed and connected. It leads to better customer service, and improved and faster decision making due to delivery of real time bi-directional data access

Interactive Visual Analytics

Visual analytics is the science of analytical reasoning facilitated by interactive visual interfaces. It can attack certain problems whose size, complexity, and need for closely coupled human and machine analysis may make them otherwise intractable. Visual analytics helps science and technology developments in analytical reasoning, interaction, data transformations and representations for computation and visualization, analytic reporting, and technology transition.



Over the last decade, a large number of automatic data analysis methods have been developed. Besides visualization and data analysis, visual analytics play an important role in the communication between the human and the computer, as well as in the decision-making process. The Visual Analytics Process combines automatic and visual analysis methods with a tight coupling through human interaction in order to gain knowledge from data. For example, all panels of a dashboard are interconnected such that if a panel is filtered by a certain criteria, all other panels of that dashboard will automatically change with that respective criteria.

Auto Alerts

Automatic alerts are the data driven notifications that alert the users when certain thresholds are met. Users can set the data alert rules based on several criteria including volume of the sales, range of KPI (Key Performance Indicators), data refresh, data point level collaboration,

etc. The tools can also send the alerts along with the reports when a metric value goes out of the boundaries. The end result of implementing these features is that metric insights can increase engagement and usage of the Business Intelligence tool in an organization and also help users to utilize their time on analysis, which is most important to the business. The admins can set up personalized alerts for the less active users on an individual or group basis. These users then automatically start receiving email alerts about the dashboard and reports that are important to them when the data changes critically or crosses key thresholds.

Technical Features

Integrate with Big Data

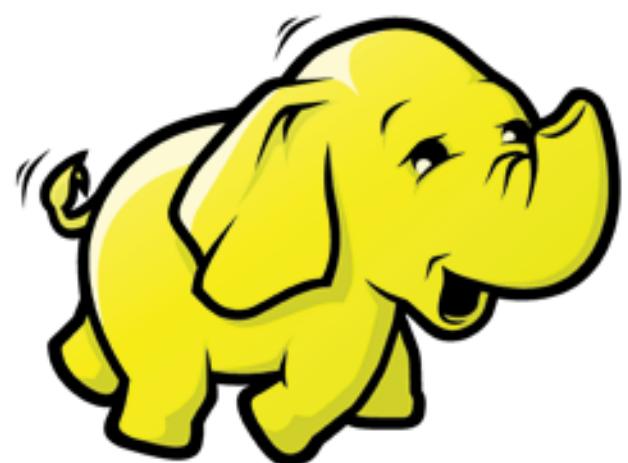
Big Data is the buzzword of the IT industry today. BI tools are expected to connect with Data Lakes seamlessly and get the reports out of it. Many BI and visualization pioneers are investing



on researching the ways to connect to the Hadoop Ecosystem and Spark Ecosystem. The data organization and APIs for these ecosystems are

different than the traditional RDBMS and multi-dimensional cubes. Big Data systems organize the data in racks and multiple nodes.

As the Terabytes and Petabytes world is going towards Big Data, it is becoming essential for the BI tools to connect with the Big Data.



Cloud

The use of Business Intelligence in the cloud is a game-changer, as it makes BI affordable and easily available as compared to traditional BI. You can save the administration cost of installing and maintaining the servers. The cloud based BI also offers adding extra resources on the fly and removing them when not needed (Elastic).

In fact, cloud based BI started in the first waves of cloud applications itself but it couldn't survive initially. Fears about putting data in the cloud were among the early impediments to success. Now the paradigm is changing. Many companies are moving online and putting their machine critical and highly sensitive data on the cloud. According to "Analytics in the Cloud," a January 2015 report by Enterprise Management Associates, adopters cite time-to-delivery of analytics and BI as primary business motivation for choosing cloud options. Time to value for analytical initiatives and improved agility stand out as the most important technical drivers.



Real Time



Real-time business intelligence is an approach to data analytics that enables business users to get up-to-the-minute data by directly accessing operational systems or feeding business transactions into a real-time data warehouse and business intelligence (BI) system. Real time BI can help support instant decision making, which is necessary for many managers.

With Real Time BI, analysis can take place in tandem with business processing so that problems can be spotted and dealt with sooner than with conventional after-the-fact business intelligence (BI) approaches. It enables the creation of a performance and feedback

loop in, which decision makers can analyze to understand what's happening in the business, act upon their findings and immediately see the results of those actions. For this, data must be up-to-date.

In-memory Analytics

In-memory analytics is an approach to querying data when it resides in a computer's random access memory (RAM), as opposed to querying data that is stored on physical disks. The performance may also depend on where the BI tool is buffering the dataset. The performance can be relatively better if it deploys the dataset on client's machine RAM rather than on server's RAM. However, it comes with an additional cost.

In addition to providing incredibly fast query response time, in-memory analytics can reduce or eliminate the need for data indexing and storing pre-aggregated data in OLAP cubes or aggregate tables. This reduces IT costs and allows faster implementation of BI and analytic applications.

Heterogeneous Data Sources

Users are neither willing to spend money nor time to consolidate different data sources (Oracle, SQL Server, DB2 ... etc.) to a single data warehouse for reporting purpose. They are looking for a consolidated view with minimal/no ETL. BI tools are expected



to provide capabilities to connect multiple heterogeneous data sources, extract the data and present the consolidated information on a single dashboard.

Users are looking for BI tools to provide an easy mechanism to connect with multiple heterogeneous data sources, and present the consolidated view on a single dashboard. You may be having finance information on oracle database, sales information on SQL Server database and HR information on DB2. With a single BI tool itself, you can connect to all these three data sources and present the consolidated view on a single dashboard.

Some BI tools are now available with built-in ETL features, which you can connect with multiple data sources, extract and massage the data at the BI tool itself instead of investing on a separate ETL tool.



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Srini Challa has 16 years of IT experience in designing and developing analytics solutions using Big Data and DW BI methodologies. He played different roles in his IT journey, including Data Architect, BI Architect, ETL Architect, DW BI Solutions architect and Big Data Solutions Architect. Srini is currently working for Mphasis Analytics Practice, leading the Big Data COE and responsible for Next Labs delivery. Data management, data architecture and analytics are some of the key areas he is interested in.

About Mphasis

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