**POWER BI ASSIGNMENT 1**

1. What do you mean by BI? Explain.

Business intelligence uses software and services to transform data into actionable insights that inform an organization’s strategic and tactical business decisions. The term business intelligence often also refers to a range of tools that provide quick, easy-to-digest access to insights about an organization’s current state, based on available data.

BI tools access and analyze data sets and present analytical findings in reports, summaries, dashboards, graphs, charts and maps to provide users with detailed intelligence about the state of the business.

1. How Power-BI helps in BI, and how does it help Analysts? Explain.

Every company owner has likely experienced the disorientation of having to make a decision based on a large volume of data. The most difficult aspect of making that decision is seeing the big picture, which is what will allow you to gain the needed insight that will guide you to the best outcome. Microsoft Power BI helps the analysts to look at each element as a whole to make better decisions. The dashboard's visual representation allows users to quickly see the data that's relevant for the choices they have to make.

Business intelligence is made available to all team members who need to access data and make decisions, using Power BI. Every important choice can be based on reliable information. Data is analyzed and updated in real time with Power BI, allowing teams/analysts to make decisions rooted in factual information.

1. Explain Descriptive analytics?

Descriptive analytics is a statistical interpretation used to analyze historical data to identify patterns and relationships. Descriptive analytics seeks to describe an event, phenomenon, or outcome. It helps understand what has happened in the past and provides businesses the perfect base to track trends.

1. Explain Predictive analytics?

Predictive analytics, a branch of advanced analytics, is the method or technique of using data to model forecasts about the likelihood of potential future outcomes in your business. Predictive analytics uses historical and current data combined with techniques such as advanced statistics and machine learning to model unknown future events. It is generally defined as learning from past collective experience of an organization to make better decisions in the future using data science and machine learning.

1. Explain Perspective analytics?

Prescriptive analytics is a statistical method that focuses on finding the ideal way forward or action necessary for a particular scenario, based on data. Prescriptive analytics uses both descriptive and predictive analytics but the focus here remains on actionable insights rather than data monitoring. The input of prescriptive analytics is the outcome of predictive analytics algorithms. You not only predict what the future holds, but you leverage that prediction to take the best course of action for the future.

1. Write five real-life questions that Power BI can solve.

**(i) Koodos**

Koodos is a new startup from Harvard Business School’s Rock Center for Entrepreneurship that builds content curation technology for Gen Z based on user-generated data. One venture capitalist called them “the competitive messaging-based Pinterest for music.”

Where they started:

Koodos’ business model is dependent on understanding relationships between different sets of data. Their first experiment matched emojis with music— if you texted an emoji to 566-367, you got a song recommendation from another person.

We just tried it and found that 👴 recommends “Legend” by Twenty One Pilots, which is a song celebrating the life of the lead singer’s grandfather.

It works well, but before a BI tool, they had no easy way of truly analyzing product performance to understand how their experiments were going.

They would have to download product logs as CSVs and upload them to Google Sheets. From there, they sometimes used SQL to run queries, but because their data wasn’t centralized, they found it difficult and time-consuming to prove whether their experiments were running as intended.

How BI helped:

With a business intelligence tool, Koodos was able to unify their data to gain an understanding of how their experiments were performing and then use those insights to build a better product.

First, they set up their business intelligence tool as a “central repository” for all product log data. With all that data collected, they could then run queries, no matter how clean the dataset was. With those queries, they could build out dashboards that compared sets of data directly in real time, making it a cinch to identify trends and relationships.

For instance, in the emoji experiment, Koodos found that the 🥺 emoji received the most song suggestions. They now know that Gen Z has more songs to recommend to people who are feeling sad than, say, people who feel like 🕺.

Using these insights helps Koodos not only build a better content curation product but also prove their product works well.

Takeaway

Use business intelligence to unite all your data to understand what’s happening in your product, when it’s happening, and what to do about it.

**(ii) NYSHEX**

New York Shipping Exchange (NYSHEX) is a shipping-technology company working to improve the process of shipping overseas. They’ve been doing very well recently, doubling enrollment in 2019, thanks in no small part to business intelligence.

Where they started:

To make sense of overall company performance, NYSHEX used to manually extract data from their proprietary application and their various cloud apps and then import it all into Excel. Because this was such a laborious process, few people had access to this data, and most of the requests for reports fell on the engineering team to execute.

Gordon Downes, CEO at NYSHEX, explains his thoughts during that time: “There had to be a better way to make information more readily available and save time for our engineering team. We needed a solution so that I, along with the rest of the team, could explore data on the fly.”

How BI helped:

NYSHEX decided to give the entire company access to the data using their business intelligence tool, Chartio. This has been possible not only because all that data is centralized into one system, but also because it’s easy for someone with no coding knowledge to dive deep into analysis.

With Chartio’s drag-and-drop Visual SQL builder, any NYSHEX employee can run queries, set up dashboards, and create reports. Even if they have no idea what SQL stands for (structured query language), they can still get exactly what they need, when they need it.

NYSHEX is now an incredibly efficient operation because every employee can access and act on real-time data. Gordon says: “Chartio gets information to the people who need it so they can make decisions without taking loads of time.”

Takeaway:

A low-code or no-code BI solution is vital for any company looking to provide the ability to understand and act on data to every employee.

**(iii) CareLinx**

CareLinx is a nationwide, in-home care network connecting families to over 300,000 in-home caregivers. In recent years, they’ve increased their profile by establishing partnerships with the likes of AARP and Aetna. Taking their next step toward growth required them to adopt a compliant business intelligence solution so they could better serve their customers.

Where they started:

To serve the families that use their product, CareLinx deals with protected health information (PHI). Because PHI is sensitive, they need a BI solution that’s compliant with the Health Insurance Portability and Accountability Act (HIPAA).

Before they established a HIPAA-compliant solution, they had two systems: a BI for non-PHI data and a separate manual system for PHI data. Anytime they wanted to do any sort of business analysis, they’d have to filter out all PHI data in order to remain compliant, leading to an incomplete picture of the people they serve. This dual-system approach wasn’t feasible as CareLinx prepared to scale the business nationwide.

How BI helped:

CareLinx already used Chartio as their business intelligence tool for non-PHI data, so their engineering and product teams already realized the benefits of good BI. Once Chartio became HIPAA-compliant, a whole new world of opportunities opened up for them.

Now, every team in the company is able to safely query any data, PHI or otherwise, to understand their users on a deeper level. Customer success, for example, utilizes Chartio to analyze data in real time and use those insights to better serve their users.

No matter how big CareLinx gets, they can still provide personal attention to each family that uses their product by using a HIPAA-compliant BI tool.

Takeaway:

Look for a BI solution that addresses all your specific needs so it can grow with you.

**(iv) Bugcrowd**

Bugcrowd is a cybersecurity platform that connects its customers to security researchers to identify vulnerabilities in products and applications. Just recently, they closed Series D funding for $30 million, and they’ve helped many Fortune 500 companies shore up their security. And the ways Bugcrowd uses BI have helped them establish their place at the forefront of their industry.

Where they started:

Bugcrowd’s goal is to successfully connect companies with security researchers. In an effort to keep both groups happy, they needed to dive into the mountains of data involved in each interaction. It was too much data to handle with spreadsheets and SQL, so they turned to business intelligence.

Their requirements were strict: airtight security and the ability to handle many data sources—and it had to be easy to use. They were having trouble finding a BI tool that fit those parameters, so they considered building their own analytics system. They had the know-how to do so, but it would’ve been costly and time-consuming. Fortunately, they found a ready-made solution.

How BI helped:

Quite a few BI tools meet the first two requirements (security and number of sources), but, too often, they sacrifice usability to reach that point. Bugcrowd found their solution in Chartio, and with those three requirements satisfied, they were able to surpass their goal of retaining customers by keeping them happy.

To retain your customers, you need to deeply understand them and learn how they use your product. Bugcrowd used Chartio to centralize all their interaction data in one place. From there, they could dive into each interaction individually or zoom out to see them all in aggregate.

This made it much easier to identify trends and insights, and it improved the work of all teams, from “customer support for proactive problem solving” to “engineering for feature release activity.”

At first, Bugcrowd’s goal was to just understand these interactions. But their business intelligence tool made this so easy that they moved seamlessly to improving each interaction. The result was a high-touch customer service approach that helped Bugcrowd acquire new business and retain existing business.

Jonathan Cran, VP of product at Bugcrowd, says: “We are able to drive negative churn because everyone from Sales to Customer Success uses Chartio to look at how customers are interacting and ask the right questions to improve an account’s health or find an opportunity to upsell.”

Takeaway:

Start with a concrete and attainable business intelligence goal (e.g., understand user interactions), and then set stretch goals based on achieving that objective (e.g., improving those interactions).

**(v) DataRobot**

DataRobot is an enterprise-level artificial intelligence platform that invented the automated machine-learning category. They’re used by a third of the Fortune 50 companies and recently announced Series E funding, amounting to $206 million. What would a company of this caliber need a business intelligence tool for? Quite a bit, it turns out.

Where they started:

As a data-centric company, DataRobot knows its way around analyzing, modeling, and presenting data. Early on, they created an ad hoc business intelligence solution, in which they created a few custom reports using Python and sent them via email. It worked pretty well for their purposes—for a while.

But after growing 60% in 2018, they realized this solution couldn’t scale with them. It wasn’t enough for DataRobot to have a data-centric culture—they needed a culture of data democracy.

How BI helped:

DataRobot made the choice to onboard new employees with a seat on their BI tool, Chartio. Their goal was to give every team the power to understand and act on data without the need to go through the engineering or analytics team.

The result was an 83% adoption rate of Chartio throughout the company. By incorporating their BI tool into the onboarding process, DataRobot cemented a culture of data democratization, where every employee had the power to analyze and act on data.

This culture turned out to be vital to their recent success. Daniil Bratchenko, VP of business operations and analytics at DataRobot, said, “Democratization of access to data is super important when you see how it works, and if we didn’t have it, we would be much less effective as a company.”

Takeaway:

Entrench your business intelligence into the day-to-day functions of your employees from day one to establish a culture of data democracy.