

POD 5: BUSINESS INTELLIGENCE TOOLS

CSC 460

Team 7

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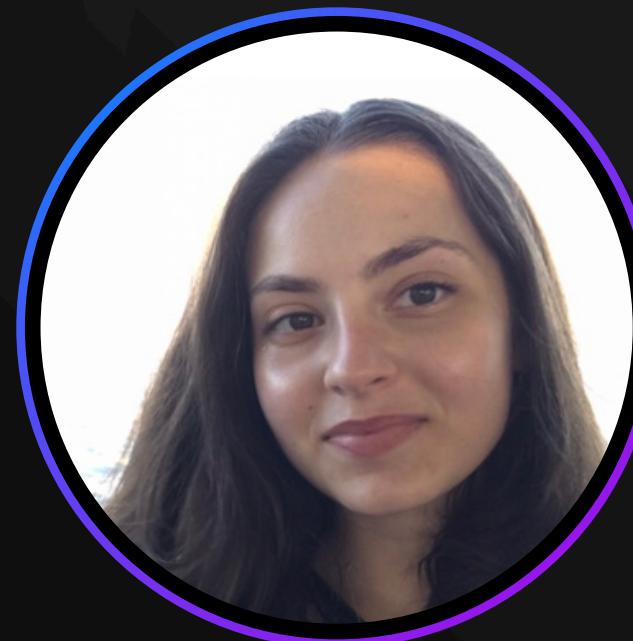
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Agenda Overview



Overview of Business Intelligence Tools



What are BI Tools?

- Analyze data to uncover patterns and trends.
- Generate insights for better decision-making.
- Support business decisions to optimize strategies and operations.

Data → Insights → Decisions



Why do they Matter?

- Improves performance by identifying areas for optimization.
- Increases efficiency by streamlining data-driven actions.
- Boosts profitability by making informed, strategic decisions.

Popularity + Community Support



Power BI

Strong community support with a large ecosystem of plugins and Microsoft backing.



Tableau

A vast community of users in data visualization and analytics, with significant resources for learning and support.



Looker

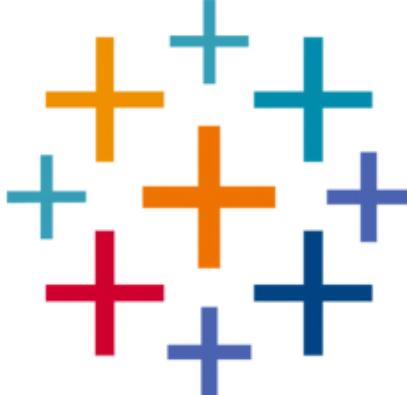
A smaller but growing community, with strong presence in modern data-driven organizations due to its cloud-first approach.

History + Evolution



Power BI

Introduced by Microsoft in 2013, known for its integration with Microsoft Office and ease of use for non-technical users.



Tableau

Developed in 2003, Tableau became popular due to its powerful visualization capabilities and drag-and-drop interface.



Looker

Founded in 2012, Looker became popular for its cloud-based platform and integration with modern data stacks.



History + Evolution



Power BI

Origins: Power BI (PBI) evolved from earlier Microsoft products: Excel's built in Power Pivot, Power Query, and with the goal of creating a more intuitive and powerful data visualization platform that could be easily integrated with Microsoft applications.



2014

Power BI launches as part of the **Office 365** suite



July 2015

Power BI Desktop allows for offline use



Dec 2015

Users can create and share custom visuals



2016

Microsoft starts a strategy of releasing monthly updates to PBI



2017

Power BI Premium for large enterprises



2019

Integrated with **Azure** and **Power** platform to allow automation



2023

Introducing nlp with **ChatGPT**

History + Evolution



Tableau

Origins: Tableau originated from a Stanford research project. The motivation behind the project was to make creating digital data visualization as easy paper ones which led to VizQL (Visual Query Language) which remains the backbone of Tableau.



2004

Tableau launches allowing users to easily create interactive visualizations



2010

Tableau Server enabled organizations to share visualizations



2015

Tableau Online offered a cloud based alternative to **Tableau Server**



2017

Acquisition of **Empirical Systems** enhanced data analysis features



2018

Explain Data feature used AI to generate data explanations



2020

Ask Data integrated nlp

History + Evolution



Looker

Origins: Looker was designed to address the need for modern business intelligence tools that could work directly with the data warehouse, eliminating the need for intermediate data extracts.



2013

Looker is launched



2016

Looker 4.0 release introduced scheduled data delivery, dashboard enhancements



2017

Looker integrated with cloud providers like Google BigQuery, Amazon Redshift, Snowflake



2020

Integration with Google Cloud



2021

Looker Blocks library expansion



2022

AI and ML enhancements



2023

Looker Studio merged reporting and dashboard capabilities of Data Studio with Modeling

Comparison of Tools

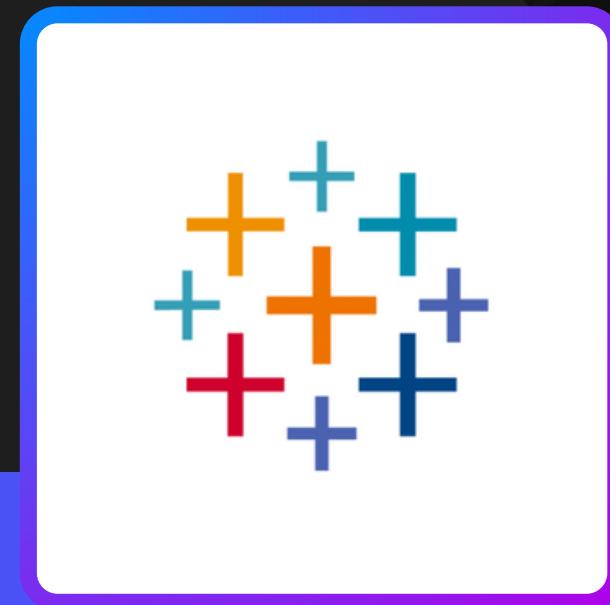
	Power BI	Tableau	Looker
Ease of Learning	moderate (familiar to MS Office users)	moderate	high (depends on familiarity w/ SQL)
Scalability	strong for small to mid-size businesses	strong for enterprises	strong for cloud-first organizations
Library Support	integrates w/ MS Tools	vast support for visualization	strong cloud integration
Use Cases	reporting + visualization	advanced visualization	embedded analytics + reporting
Performance	strong integration w/ Azure	fast w/ big data	optimized for cloud-based data
Pricing	affordable	expensive	subscription-based (customizable)

PROS



Power BI

- Excellent integration with Microsoft products
- Cost-effective pricing
- User-friendly interface
- Customizable dashboards
- Seamless integration with various data sources



Tableau

- Strong visualization capabilities
- Efficient with large volumes of data
- Seamless integration with various data sources
- Customizable dashboards



Looker

- Robust data modeling with LookML
- Excellent SQL support
- Facilitates real-time data exploration.
- Consistent data management across reports.

CONS



Power BI

- May perform slower with large data sets
- Extensive customization options can overwhelm new users
- Works best with Microsoft environment
- Mobile functionality is limited compared to desktop



Tableau

- High cost can be prohibitive for smaller organizations
- Steep learning curve due to advanced analytics/visualization techniques
- Mobile functionality is limited compared to desktop



Looker

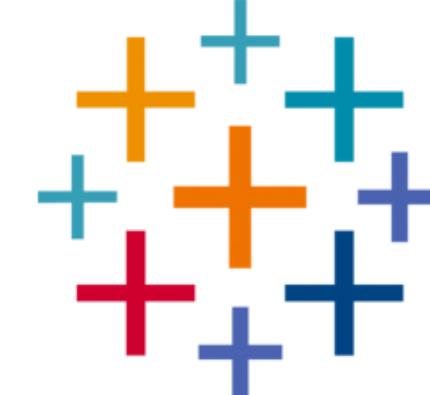
- Higher cost with a subscription based pricing model
- Steep learning curve due to LookML
- Complex and time-consuming initial setup and integration
- Smaller user community compared to Power BI/ Tableau

Industry + Academic Relevance



Power BI

Widely used in small to mid-sized businesses, especially those that already use Microsoft products



Tableau

Popular in large enterprises, especially in industries where data visualization is critical (finance, healthcare, retail).



Looker

Strong presence in modern, cloud-first organizations, especially in industries that rely heavily on embedded analytics.



Recommendations + Conclusion

Summary of Findings

- Each BI tool has strengths depending on the organization's size, existing technology stack, and data needs.
 - Power BI is ideal for businesses embedded in the Microsoft ecosystem,
 - Tableau is preferred for its powerful visualizations
 - Looker shines in cloud-based environments.

Final Recommendation

- Based on your needs, choose Power BI for cost-effectiveness and ease of use, Tableau for advanced visualizations, and Looker if you're operating in a cloud-native environment.



THANK YOU

Q&A