MITRAIS WHITE PAPER
BI (BUSINESS INTELLIGENCE) TOOLS COMPARISON

POWER BI VS GOOGLE CLOUD BI VS ZOHO ANALYTICS
FEB 2021

VER.0.1

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1. Overview

This paper is produced originally to evaluate Power BI, Google Cloud BI, and Zoho Analytics.
This evaluation is designed to assist our clients in choosing the correct Business Intelligence tool for their own unique requirements.

2. Evaluated Platforms

No.	Platform
1.	Power BI
2.	Google Cloud BI
3.	Zoho Analytics

Table 1 – Evaluated Platforms

3. Other Platforms

Other platforms, which are not evaluated but may be included in the future are listed below:

- N/A

4. Evaluation Criteria

The evaluation gives points to the selected criteria where the weight of each criteria is determined by the importance of that criteria.
NB: This document uses a weighting schema, which is currently relevant for Mitrais' use.

Criteria used:
1. Pricing
   This criterion is vital to see how much user has to pay for the tools and the features they get under the price. The lower the price, the better it is.

2. Dashboard
   This criterion sees whether the tools provide reusable chart, and whether dashboards and reports are created within the same interface and provide embedded dashboard design tools.

3. Usability
   Easiness in using the tools is one of the main criteria to be included. This criterion defines whether the tools have common standard dashboard controls, have a support menu for assisting users, and have demo videos.

4. Advance Interface (Multi-Source)
   This criterion tells us whether tools can support advance Interfaces such as: MySQL, PostgreSQL, CSV, Microsoft products, etc., and SAP connector.

5. Realtime and Performance
   In general, performance is one of the most important criteria. The higher the tool

performs, the better.

6. UI Integration in Applications
This criterion defines whether tools offer view mode, API to build own dashboard tools programmatically, and offer embedded tool support to create dashboard within the application.

7. Forecasting/AI
This criterion defines whether tools provide out-of-the-box or not and can display general chart by AI assistant.

8. Technical Support
This criterion defines technical support for each tool.

9. Multi-Language
This criterion is used to define if tools are supported with multi-language.

10. Scalable (modules and users)
This criterion is used to scale tools on modules and user's side.

11. Multitenant
This criterion is used to define if tools support multitenant feature or not.

5. Platform Evaluation

PLATFORM	Criteria											TOTAL SCORE
	1	2	3	4	5	6	7	8	9	10	11	
Power BI	6	9	7	9	8	9	7	10	7	8	9	89
Google Cloud BI	7	7	7	8	8	7	5	10	9	6	7	81
Zoho Analytics	5	6	8	5	7	8	8	10	6	9	8	80

Table 2 - Platform Evaluation

6. Platform Recommendation
6.1.1 Pricing

Solution	Evaluation
Power BI	Cloud and On-Premise schemes, and price depends on criteria such as total user, instance package, etc. Not dependent to usage volume
Google Cloud BI	- Visualization of MySQL and PostgreSQL data is free - Visualization of other data sources including Big Query (AI and big data oriented) will have a relatively reasonable pricing scheme based on usage volume
Zoho Analytics	- Cloud and On-Premise schemes, and price depends on criteria such as total user, instance package, etc.

	- Not dependent to usage volume - For On-Premise scheme, the two options are standalone and direct embedded

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Table 3 – Pricing

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Conclusion:
- Power BI   : 6
- Google Cloud BI   : 7
- Zoho Analytics   : 5

Both Power BI and Zoho Analytics are paid licenses for Cloud and On-Premise scheme, while Google Cloud BI is a free license for visualization of MySQL and Postgore SQL data. The use of other data sources, including Big Query, can be purchased with reasonable price.

6.1.2   Dashboard

Solution	Evaluation
Power BI	- Does not provide reusable chart component - Dashboard and reports are created within the same interface - Provides embedded dashboard design tools
Google Cloud BI	- Does not provide reusable chart component - Dashboard and reports are created within the same interface - Dashboard design tools cannot be embedded
Zoho Analytics	- Provides a reusable chart component which can be used in a different dashboard - Reports are created in a separate UI. It is only shown as a link/button inside the dashboard - Dashboard design tools cannot be embedded

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Table 4 – Dashboard

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Conclusion:
- Power BI   : 9
- Google Cloud BI   : 7
- Zoho Analytics   : 6

While both Power BI and Google Cloud BI do not provide any reusable chart component, Zoho Analytics provides a reusable chart component that can be used in a different dashboard. However, Zoho Analytics creates reports in a separate UI, and it is only shown as a link/button inside the dashboard, while Power BI and Google Cloud BI create reports within the same interface. In both Google Cloud BI and Zoho Analytics, the dashboard design tools cannot be embedded, while in Power BI it can.

6.1.3   Usability

Solution	Evaluation
Power BI	- Has common standard dashboard controls - Documentations and Helps are displayed in the menu - No interactive Helps

	- Demo videos are not directly displayed on the menu
Google Cloud BI	- Has common standard dashboard controls
	- Documentations and Helps are displayed on the menu
	- No interactive Helps
	- Demo videos are not directly displayed in the menu
Zoho Analytics	- Has common standard dashboard controls
	- Documentations, interactive Helps, and demo videos are displayed in the menu, including live chat support

<div align="center">Table 5 – Usability</div>

Conclusion:
- Power BI   : 7
- Google Cloud BI   : 7
- Zoho Analytics   : 8

All the tools have common standard dashboard controls and display Documentations and Helps buttons on the menu. However, both Power BI and Google Cloud BI do not have interactive Helps and the demo videos are not directly displayed on the menu. On the other hand, Zoho Analytics has interactive Helps and demo videos are displayed on the menu.

6.1.4   Advance Interface (Multi-Source)

Solution	Evaluation
Power BI	- Built-in support for MySQL, PostgreSQL, CSV, etc., and Microsoft products
	- Offers partner and community connectors
	- Built-in SAP connectors
Google Cloud BI	- Built-in support for MySQL and PostgreSQL, CSV, and Google products
	- Offers partner and community connectors
	- No direct SAP connector
Zoho Analytics	- Built-in support for MySQL, PostgreSQL, etc., and Zoho products
	- Offers partner connectors
	- No direct SAP connector

<div align="center">Table 6 – Advance Interface (Multi-Source)</div>

Conclusion:
- Power BI   : 9
- Google Cloud BI   : 8
- Zoho Analytics   : 5

All tools are built-in MySQL, PostgoreSQL support, but they support different products (Power BI supports Microsoft products, Google Cloud BI supports Google products, and Zoho Analytics supports Zoho products). Both Power BI and Google Cloud BI offer partner and community connectors, while Zoho Analytics offers only partner connectors. Both Google Cloud BI and Zoho Analytics do not have direct SAP connector, while Power BI is built-in SAP connectors.

6.1.5 Realtime and Performance

Solution	Evaluation
Power BI	- Has a query cache to increase performance - Has performance analyzer
Google Cloud BI	- Provides a 50GB memory cache - A simple process takes 10 to 100 secs per billion of rows
Zoho Analytics	Performance can be improved by instance scaling

<p align="center">Table 7 – Realtime and Performance</p>

Conclusion:
- Power BI   : 8
- Google Cloud BI   : 8
- Zoho Analytics   : 7

In Real-time and Performance criteria, Power BI has a query cache to increase performance and performance analyzer. While Google Cloud BI provides a 50GB memory cache, yet simple process takes 10 to 100 seconds per billion of rows. And Zoho Analytics can improve performance by instance scaling.

6.1.6 UI Integration in Applications

Solution	Evaluation
Power BI	- Offers view mode - Offers API to build own dashboard tools programmatically - Offers embedded tools to create dashboard within the application
Google Cloud BI	- Offers view mode - Offers API to build its own dashboard tools programmatically - Does not support embedded tools within the application
Zoho Analytics	- Offers view mode - Offers API to build own dashboard tools programmatically - Offers standalone dashboard tools possibly under application subdomain

<p align="center">Table 8 – UI Integration in Applications</p>

Conclusion:
- Power BI   : 9
- Google Cloud BI   : 7
- Zoho Analytics   : 8

All the tools offer view mode and API to build own dashboard tools programmatically. Power BI offers embedded tools to create dashboard within application, while Google Cloud BI does not; and Zoho Analytics offers standalone dashboard tools, possibly under application sub domain.

6.1.7 Forecasting/UI

Solution	Evaluation
Power BI	- Provides out-of-the-box

	- Has a question box to generate chart into a dashboard with natural language
Google Cloud BI	Possible using Google Big Query ML with an additional cost
Zoho Analytics	- Provides out-of-the-box - Can display a unique dashboard by asking virtual assistant, ZIA, with natural language

<div align="center">**Table 9 – Forecasting/UI**</div>

Conclusion:
- Power BI   : 7
- Google Cloud BI   : 5
- Zoho Analytics   : 8

Both Power BI and Zoho Analytics provide out-of-the-box Forecasting/UI. Using natural language, Power BI has a question box to generate charts into a dashboard, while Zoho Analytics can display a unique dashboard by asking a virtual assistant, ZIA. As for Google Cloud BI, forecasting is possible using Google Big Query ML with an additional cost.

6.1.8   Technical Support

Solution	Evaluation
Power BI	Evert van de Beekstraat 354 1118 CZ Schiphol Netherlands Phone: +31 (0)20-500 1500
Google Cloud BI	Claude Debussylaan 34, 1082 MD Amsterdam, Netherlands Phone: +31 20 504 5100 North Holland
Zoho Analytics	Zoho Corporation B.V. Beneluxlaan 4B 3527 HT UTRECHT The Netherlands Phone: +31 85 066 6700

<div align="center">**Table 10 – Technical Support**</div>

Conclusion:
- Power BI   : 10
- Google Cloud BI   : 10
- Zoho Analytics   : 10

All tools have technical support address in detail, including phone numbers.

6.1.9   Multi-language

Solution	Evaluation
Power BI	UI and data format can be localized in other languages, excluding the existing report
Google Cloud BI	Language is set according to Google account setting
Zoho Analytics	- Language is set according to the user's browser or account setting

| | - Need to wait about 10 minutes to be displayed |

<div align="center">**Table 11 – Multi-language**</div>

Conclusion:
- Power BI   : 7
- Google Cloud BI   : 9
- Zoho Analytics   : 6

All tools can be localized in other languages according to the user's browser. For Power BI, the UI and data format can be localized, excluding existing reports. For Google Cloud BI, language is set according to the Google account setting. For Zoho Analytics, language is set according to the user's browser or account setting but needs to wait about 10 minutes to be displayed.

6.1.10 Scalable (Modules and Users)

Solution	Evaluation
Power BI	- Two modules' options: Pro and Premium - Flexibility on the total users is on the Premium package
Google Cloud BI	Has high flexibility to add/remove features as it is basically cloud services
Zoho Analytics	- Five module options: Basic, Standard, Premium, Enterprise, and Embedded - Embedded does not charge End-User

<div align="center">**Table 12 – Scalable (Modules and Users)**</div>

Conclusion:
- Power BI   : 8
- Google Cloud BI   : 6
- Zoho Analytics   : 9

In this criteria evaluation, compared to the other two, Zoho Analytics offers more selections of modules: Basic, Standard, Premium, Enterprise, and Embedded. Power BI tool only offers modules options (Pro and Premium), with the total user flexibility is on the Premium package. While Google Cloud BI tool offers very flexible modules to add/remove features as it is basically cloud services.

6.1.11 Multitenant

Solution	Evaluation
Power BI	Supports user grouping called workspace
Google Cloud BI	- Does not explicitly support multi-tenancy - Provides role-based access level
Zoho Analytics	- Embedded version follows applications role setting - Out-of-the-box multitenancy in a standalone version

<div align="center">**Table 13 – Multitenant**</div>

Conclusion:
- Power BI   : 9
- Google Cloud BI   : 7

- Zoho Analytics   : 8

For multi-tenant criteria, Power BI supports user grouping called the workspace. While Google Cloud BI does not explicitly support multi-tenancy yet provides role-based access level. For Zoho Analytics, the embedded version follows applications role setting, and its Out-of-the-box multi-tenancy is in a standalone version.

7. Conclusion

Based on Mitrais weighting criteria, the first position is Power BI, then comes Google Cloud BI, and the last one goes to Zoho Analytics. Power BI is a Microsoft product, Google Cloud BI is a Google product, and Zoho Analytics is a Zoho product.

Although Zoho Analytics gets the last position, appreciation needs to be given to this tool to compete with Microsoft Power BI and Google Cloud BI. Zoho Analytics is available in Cloud and On-Premises like Power BI, while Google Cloud BI is only available in cloud scheme.

Yet Google Cloud BI is pretty solid. Having dashboard and reports within the same interface and common standard dashboard controls, Google Cloud BI is easy in usability.

The team recommended Power BI for general purposes. Power BI is available in the cloud or on-premise scheme. It has dashboard and reports within the same interface, has common standard dashboard controls, is built-in SAP connectors, and supports multi-tenant. The support and integration are mature enough for embedded tools.

All tools provide a free trial; thus, it can be used to assess against development framework that the company has implemented in the project.

Please note that this is the result from Mitrais' criteria-weighting scheme, which correlates to Mitrais current needs. Other clients may use this report with different weights to meet their unique requirements and come to a different conclusion.

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