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Analytical Platforms: Key Components and Importance for Modern Business

Artemov Alexey
Senior Data Engineer, Schwarz Media Plattform GmbH, Mülheim, Germany

Abstract: Currently, the success of a business in the market strongly depends on the ability of management to respond promptly to market dynamics. In the modern economic context, the information necessary for operational decisions becomes a key resource of the company. Knowledge is becoming an increasingly important element in the cost structure of products and services, so not just the possession of information, but its pre-processing and organization for rapid analysis and decision-making are critically important.

In the conditions of the modern economy, every company strives to increase its competitiveness and maintain it at a high level. In this context, business intelligence systems act as a powerful tool that allows managers to make informed management decisions with significant savings in time that was previously spent on searching and analyzing the necessary information.

This article is devoted to an overview of the most common systems in the field of business analytics, available tools and analytical data processing tools on the market. The author reviewed the architecture of analytical platforms, the features of analytical platforms, analyzed existing business intelligence platforms and their various directions. Also, after analyzing the data obtained, the author offers a detailed analysis of each, taking into account its advantages and disadvantages. [1].

The purpose of this article is to study the general characteristics of analytical platforms, as well as to identify the most popular systems in the field of business analytics, taking into account their advantages and disadvantages. To achieve this goal, the following tasks were set: to study in detail the key concepts of business analysis, analyze the current state of the market of business analysis systems.

The methodology for writing the article was scientific research, the opinions of analysts based on an in-depth analysis of this problem, as well as specialized literature.

Keywords: business analytics, analytical platforms, general characteristics of business analytics, architecture of analytical platforms, the importance of analytical platforms in business.

Introduction

Analysis of sales, customer bases and various reports provides managers with valuable information for developing strategies and planning for the future. The introduction of a business intelligence system helps to optimize time, making information more understandable and accessible to all employees. Business Intelligence (BI) is a key process that allows companies to detect and analyze various problems, improve their operations and make informed decisions. Business intelligence specialists study data, processes and systems, identifying weaknesses in an organization and offering solutions that will improve its efficiency. This activity is aimed at solving the following tasks, which are described in Table 1.

Table 1. Tasks facing analytical platforms

Task name	General characteristics
Saving resources	Business intelligence methods help to prevent unnecessary expenses, eliminate errors and minimize unnecessary costs.
Search for new opportunities	Through timely analysis, the company can discover promising markets, products and services that contribute to increasing the company's profits.
Improving the decision-making process	In this case, business intelligence tools provide operational monitoring of information, which helps the management team to make informed decisions.
Risk management	Business analysis allows you to identify potential risks and develop strategies to reduce them

Thus, business analysis provides the company with the opportunity to remain competitive, make informed decisions and optimize its activities [2].

BI-systems can be divided into three types, which will be presented in Table 1.

Table 2. types of BI-systems

Data Storage	Collecting and storing information that will later be used for analytics
ETL system	This system is actively engaged in constant updating and processing of information. Its functionality can be involved in the processes of creating backup copies of data or periodically updating dashboards, which serve as an important tool for visualization and visual display of information.
BI server/BI tool	A service for storing and updating dashboards, as well as distributing access to them (a platform for visualizing and building dashboards) [3,4]

There is also another classification of BI, according to which four main areas of business analysis systems can be distinguished (Fig. 1).

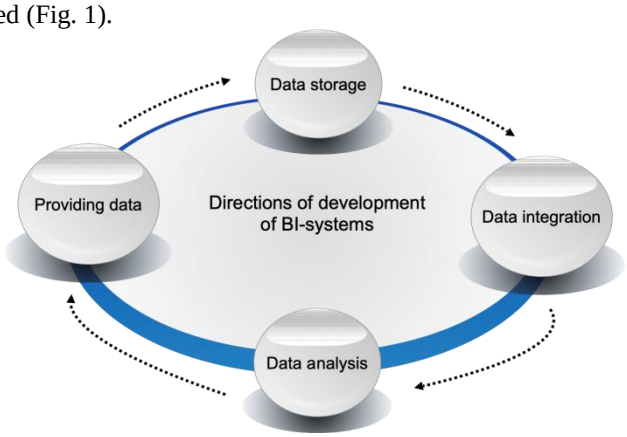

Fig.1. Directions of development of BI-systems

Now there are more than 20 BI platforms on the market, and based on the research already conducted by specialists in this field, reviews from analysts and reputable consulting agencies, an overview of the most popular ones will be conducted below [5].

I. Types of analytical platforms

HubSpot is a cloud platform providing inbound marketing, sales and customer service solutions aimed at supporting companies in attracting their customers. It offers an extensive set of tools covering all aspects of the customer journey, including content management, email, social media, marketing automation, lead management, sales, customer service and analytics. HubSpot has a universal configuration that allows companies to adapt their strategies to their unique needs and goals.

One of the important advantages of HubSpot is an extensive set of tools for business analysis:

- HubSpot provides reliable analysis and reporting tools that allow companies to track key indicators in the field of marketing, sales and customer service.
- The platform integrates seamlessly with a variety of other systems, including CRM, social media, and marketing automation software, providing unified data management.
- HubSpot makes it possible to create custom dashboards that display the most important indicators and data for the company, which facilitates fact-based decision-making.
- Automation of marketing tasks, such as email newsletters and social media postings, frees up time for strategic analysis and allows companies to use resources more efficiently.

Thus, HubSpot is a comprehensive platform that provides companies with tools and data for more effective analysis and optimization of their activities.

Oracle NetSuite is a cloud—based software solution designed for business process management. It provides a set of functions for financial management, customer relationship management, in order to help companies optimize their activities and extract valuable knowledge from their operations. However, it is worth noting that Oracle NetSuite stands out for its high degree of customizability, which allows companies to adapt the platform to their unique needs and goals. Key features of Oracle NetSuite include financial, inventory, order management, supply chain and e-commerce. Due to its high scalability, Oracle NetSuite is suitable for companies of various sizes, providing them with a complete toolkit for managing operations and analyzing their activities.

Thus, Oracle NetSuite is a powerful solution that helps companies effectively manage their activities and conduct in-depth analysis of their operations.

Integrate.io - it is an innovative cloud platform for data integration that integrates all your data sources in a single center. This universal platform offers a variety of options, including no-code and low-code solutions, making it accessible to all users. Thanks to the intuitive graphical interface, Integrate.io simplifies the implementation of ELT (data extraction, transformation and loading) or replication solutions. The platform provides a wide range of solutions covering various areas, including marketing, sales, customer service and development. Integrate.io It offers a variety of functionality that expands your data management abilities. For example, a marketing analytics solution provides tools for omnichannel marketing, data-based analytics, and the enrichment function of your marketing database. The analytical solution for customer support contributes to more efficient business decision-making by providing comprehensive information and data analysis.

Now about another platform - Tableau. Tableau is a leading solution in the field of business intelligence, based on its own technologies VizQL and Data Engine. It provides an opportunity to use data from various sources and combine them for analysis. Tableau also has the functionality of multi-user work on reports and provides regular updates of maps and geospatial analytics.

Another important platform is Klipfolio Dashboard, which is completely located in the cloud, which provides efficient data processing and the ability to visualize data in real time. It has a simple interface, supports various types of data and is compatible with various devices, including smartphones, tablets and Smart TVs. Klipfolio also provides multi-user mode and authentication[6].

As a result, these platforms provide ample opportunities for data visualization and analysis, each of them has its own unique features and advantages.

II. Architecture of analytical platforms

The SAS platform is an analytical environment where all key functionality is provided using the capabilities of software from SAS. SAS Viya usually provides open services that can be accessed via REST calls or APIs for Python, Java and R. The role of an enterprise architect is to create an architecture concept and demonstrate how it supports business scenarios. In the following paragraphs, three conceptual levels of the use of analytical platforms will be presented. The first level is related to the analytical platform itself, and the other two illustrate how the platform is applied:

1. Analytics platform as a set of services. You can think of this platform as a provider of services related to each stage of the analytics lifecycle: data collection, analysis and deployment. These services can be organized in three main layers:
    - Data Layer: This layer serves as the basis for analytics. Data processing services include collecting data from various sources, such as files, databases, Hadoop, message queues, and the Internet. It is important to solve data quality problems and transform them into a basic analytical structure. Effective data management through a complete chain can solve this problem, but analytical intervention will always be required for additional processing.
    - Detection and Simulation Layer: This layer provides visual reporting interfaces and a variety of analytical algorithms.
    - Deployment and Execution Layer: This layer deals with the deployment of analytics in applications and business processes. Additional services are important here for change management, deployment in the production environment, and performance monitoring. Analytics execution services are also available, allowing you to run models and rules in a data stream, in a database, or as web services. Additional call management and document management services support user activity in analytical applications.

2. Analytical applications. Analytical applications work on top of the analytical platform, using its services and providing results in a user-friendly interface. SAS offers a number of ready-made applications and solutions focused on various industries, but also provides the ability to create your own applications using standard development tools such as Java or Python, and integration via API.
3. System Integration. Today, analytics and artificial intelligence are increasingly becoming an integral part of systems and core business processes. Operators can make decisions based on analysis (for example, recommendations on the next steps), or decisions can be automatically made by algorithms. Therefore, analytics should be integrated into systems that support key transaction cycles. Below is an example of how this might work:
    - Online applications and core systems. They can turn to the analytical platform to receive recommendations or make decisions in real time, which directly affects the interaction with customers.

- Close to real-time interventions. Message queues are monitored to identify unusual activity patterns and warnings that another system cannot respond to.
- Data processing at night. The data can be retrieved from the data warehouse or the models can be run directly into the data warehouse in situ.
- Web data and text analysis. Data from the Internet can be used to assess trends, and they can be sent to an analytical platform for text analysis and sentiment determination.
- Internet of Things (IoT). Analytical models that improve data (for example, image classification) are used on peripheral devices, and analytical results are sent back to the platform.
- Business analytical applications. Some of them can directly use the services of the analytical platform, while others, remote or downstream applications, may need output data recorded in the analysis results storage (for example, HDFS) [7].

III. Examples of the introduction of domestic BI-systems

The integration of Alpha BI into the information and analytical system for monitoring and analyzing quality indicators of the Russian Helicopters Holding has led to significant improvements in the operation of the system:

- A significant reduction in the burden on qualified personnel, especially in the quality services of enterprises and management organizations.
- Reducing the amount of routine work related to data processing and report creation.
- Elimination of duplication when processing data in different services.
- Reduction of time spent on data search and coordination of activities in the management company.
- The introduction of a subsystem for accounting and analysis of advertising acts in the process of production and operation of air transport during the warranty period, which made it possible to avoid the use of paper media.
- Increase labor productivity by working in a single information space and full transparency of data on the quality of air transport.
- The integration of the Modus BI system into Uralsib Corporation was aimed at achieving the following goals:
- Consolidation of data from more than 100 Excel files over 3 years.
- Calculation of financial indicators for all periods and analytical sections.
- Reducing reporting time and reducing the number of errors.
- Providing employees with convenient dashboards and shareholders with information about the holding companies in a convenient format.
- Ensuring the security of data storage and processing.

The introduction of Modus BI made it possible to automate data collection and verification of their correctness at the earliest stages. Now it is possible to calculate financial indicators, collect data from Excel, convert and supplement them, as well as create visual reports on dashboards. The top management of the company received operational access to key indicators.

Implementation of Luxmus BI solution in "Medical Information and Analytical Center" (MIAC) St. Petersburg was aimed at solving the following tasks:

- Acceleration of data processing and information interaction of medical structures.
- Collection of all necessary services into a single information control system.
- Minimizing errors when generating reports by configuring automated customized reports.
- Providing access control to statistics data using a multi-level role model.

The use of Luxmus BI has significantly increased the efficiency of the functioning of the St. Petersburg healthcare system.

Conclusion

In conclusion, it is worth emphasizing that business analysis continues to evolve, always bringing with it new tools and technologies. Nevertheless, the platforms and tools discussed in this article remain among the most popular and widely used throughout 2023. The main key to success in the field of business analysis is the ability to choose the tools that meet your needs and constantly monitor the latest trends and developments in this area. Using all the possibilities of the presented tools and technologies, you will be able to extract valuable knowledge, make more informed decisions and contribute to the growth of your business in 2023 and in the long term.

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