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## OPPORTUNITIES AND RISKS OF IMPLEMENTING BUSINESS INTELLIGENCE SYSTEMS IN SMALL BUSINESS ACTIVITIES

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### ABSTRACT

*The article analyzed the opportunities of Business Intelligence (BI) systems as an effective solution in eliminating existing problems in small business activities and determining prospects. As a result of the analysis, the advantages and disadvantages of BI systems in determining the prospects of small business activities were discussed. Further stages of the study were identified as a result of the analysis. As "data", it is possible to understand the daily incoming voluntary view data collected in the process of business activities can be collected by software-hardware systems, that is, "raw irregular data".*

**KEYWORDS:** *Business Intelligence, Benefits, Risks, Information Systems, Small Business*

### INTRODUCTION

Today, the integration of information systems not only in the process of business activity in an accelerated fashion is going on, but they are also becoming an integral part of the business. One of the areas in which information systems are widely used is increasing the efficiency of business processes. This sphere includes tasks, for example, looking for effective solutions of business processes, automation of them, analysis of collected data, risk forecasting and improving the

financial situation of the business, as well as determining the prospects of business activity. There appears a need for software and hardware solutions consisting of information systems to perform these tasks effectively. Thanks to technological progress, new devices, technologies, systems are being created almost every day. This, in turn, provides an opportunity to effectively meet the needs of small scale business.

One of the problems in the small-scale business activities is data collection. It includes collecting data, storing it, comparing and analyzing it regularly, determining its source, and finding weaknesses in reports based on it. As the number and type of data also increase day by day, their collection and analysis begin to require a lot of time and factor, and in business activities, the timely analysis leads to a delay in the adoption of decisions that must be made based on the necessary analytical data, the implementation of appropriate changes, the use of measures to combat. This, in turn, will have a direct impact on the profits of the business on its financial situation.

Now there are a lot of ready-made Information Systems, Solutions in the collection and analysis of data. Most of them do not have the capabilities and advantages of BI systems in solving the abovementioned problems. The purpose of the study is to examine the opportunities and disadvantages of BI systems in determining the prospects of small scale business. At the beginning of the article, the problems in small business of Uzbekistan were analyzed. After that, the authors analyzed the possibilities of BI systems, their architecture, components, functions, as well as the potential risks of BI systems in the implementation of business activities.

## **MATERIALS AND METHODS**

The Republic of Uzbekistan was chosen to analyze the problems and risks of small business on a state scale. One of the main reasons for this is the fact that entrepreneurship is developing very rapidly in Uzbekistan and the economy has entered the top 20 ratings of business environment improvement [1]. "A small business is an organization that has a private sector (usually senior management), but not dominant in its market, supporting local operations and employs fewer people" [2], writes Fayoza Bazarova in her article titled "Problems and solutions to the management of small business and entrepreneurship in Uzbekistan". Statistical data provided by Bazarova's study indicate that the share of small business in the GDP was 59.4 percent in 2018, 48.9 thousand new small business entities were created, 28.2 percent growth compared to 2017. It can be seen from this that small-scale companies are rising rapidly in this state. This, in turn, illustrates the rising value of information systems in small-business operations.

According to research, 25-33 percent of all independent small businesses suffer from failure in the first two years in Uzbekistan. 8 out of every 10 businesses will end in 10 years. [2]

Small business participants, unlike large corporations, usually do not have large financial and Human Factors. The consequences of errors, risks, or unforeseen events during the activity often lead to the end of small business activities. This trend is caused by the fact that financial resources are limited in a small business, as well as the use of inefficient analytical devices in the management of an organization, risk management, analysis, preparation of reliable reports on the state of business activity, risk forecasting and counter-measures against problems, or lack of use of such devices in general.

What is Business Intelligence (BI) systems itself? Scientists gave different definitions for it. This term was firstly used by Hans Peter Lun in an article published in the IBM System Journal under the name "A Business Intelligence System" in 1958. Lun presented business as a collection of all sorts of directions in science, technology, trade, production and legislation. And he tried to explain the systems used in them as a system of conscious activity (Intelligence System) [3]. In 1989, Howard Dresner, a business analyst at Gartner, which is a major analytical consulting company in the United States, described BI systems as "Technologies that combines under one umbrella for decision-making [4]. Jonathan Wu gave definition for BI terminology as the process of collecting multi-aspect information and the software as a means of answering business questions, as well as researching data as identifying significant trends in his article titled "What is Business Intelligence?" in 2000 [5].

By analyzing these definitions, BI can be divided into three major parts. They are "Data", "Information" and "Knowledge". As "data", it is possible to understand the daily incoming voluntary view data collected in the process of business activities can be collected by software-hardware systems, that is, "raw irregular data". "Information" refers to data that has been organized, analyzed, and given significance. As a result of the analysis and study of information, "intelligence" can be understood as a fundamental tool for decision-making in business activities. Databases, data processing technologies, and devices are often used to distinguish information from raw data (Data Mining, Machine Learning, Data Warehousing). BI devices (decision-making, dashboard, statistics, visualization) are used to bring information from the data object to an accessible appearance for users. In all market operations, the amount of incoming data tends to increase at a much faster rate from year to year. They don't bring benefit anyone in the case of raw data. They will not benefit anyone in the case of raw data, in the data collected in any business activity, there will be the knowledge that will add to the development of this business. The main task of BI systems is to generate this knowledge and thereby create the maximum productive use of information, which seemed to be unnecessary before business activities.

## RESULTS AND DISCUSSION

So, BI is:

- Transfer of data to information and knowledge about business activities, the process of increasing the efficiency of the decisions that a business makes using the synthesized knowledge;
- Information technology methodology and programming. Collection of large data, storage, processing, sorting, analysis to bring to the appearance that a person can understand;
- Information and consolidation (systematized, regulated) are the knowledge acquired about business activities as a result of in-depth analysis of data.

The functions of BI systems in the strategic development of business:

- To assess the effectiveness of business lines;
- Control over the implementation of business plans;
- Control of financial devices;
- To analyze the effectiveness of the use of financial factors;

- To assess investment, financial and operational activities and determine prospects;
- Business activity modeling;
- control, manage and plan of expenses.

The business intelligence concept is characterized as the process of making decisions about business activities and implementing data (meta-data) on the prospects of business activity following a detailed review.

Components of BI systems:

- Data Collection;
- Data Integration;
- Data Storages;
- Data Processing;
- Data Presentation.

*Data Collection* includes software systems that provide the necessary information for the BI system. Specifically, it is necessary to distinguish between internal and external systems as a source. The required data is transferred into advances systems, processed, and condensed through *Data Integration*. This process is called the ETL (Extract Transform Load). The purpose of the ETL process is to ensure that the processed data is stored in the desired form to the database. Different tools may be used in *Data Storages*. The Data Warehouse and Data Marts tools are used in this section. When processing or analyzing data, first of all, all concepts and tools related to the analysis of data are selected. As a result, at this stage, the data stored during the Storage Process is attached to analytical programs that analyze the data using previously defined criteria. *This process* also includes the data production components used for online analytical processing (OLAP) and Data mining. Predictive modelling and Data mining – these tools are designed to help users classify data, formulate nominal and quantitative measurements, as well as use mathematical tools developed for analysis. In the *Data Presentation*, the results of the analysis are presented for targeted groups by special analysts [9].

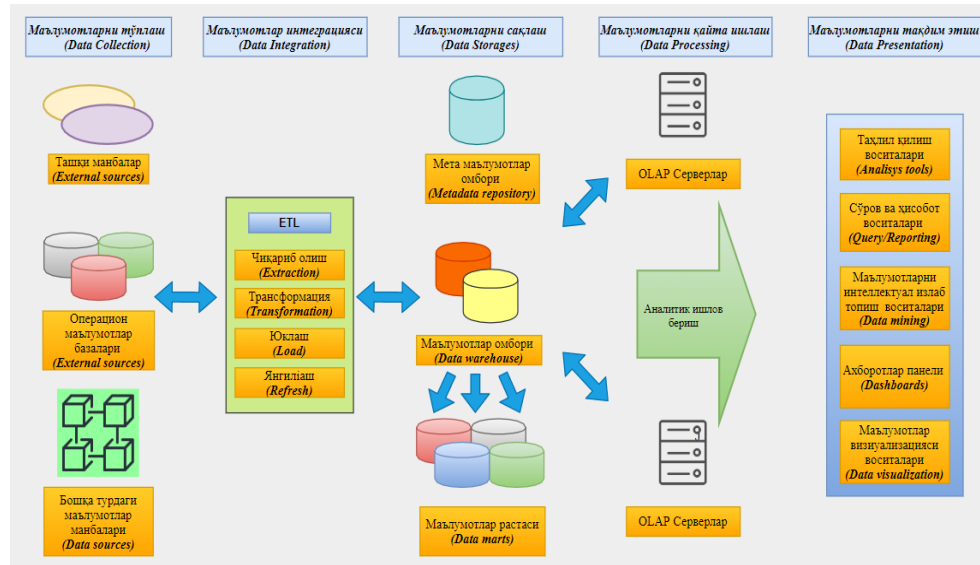


Figure 1. Data flow diagram in BI systems

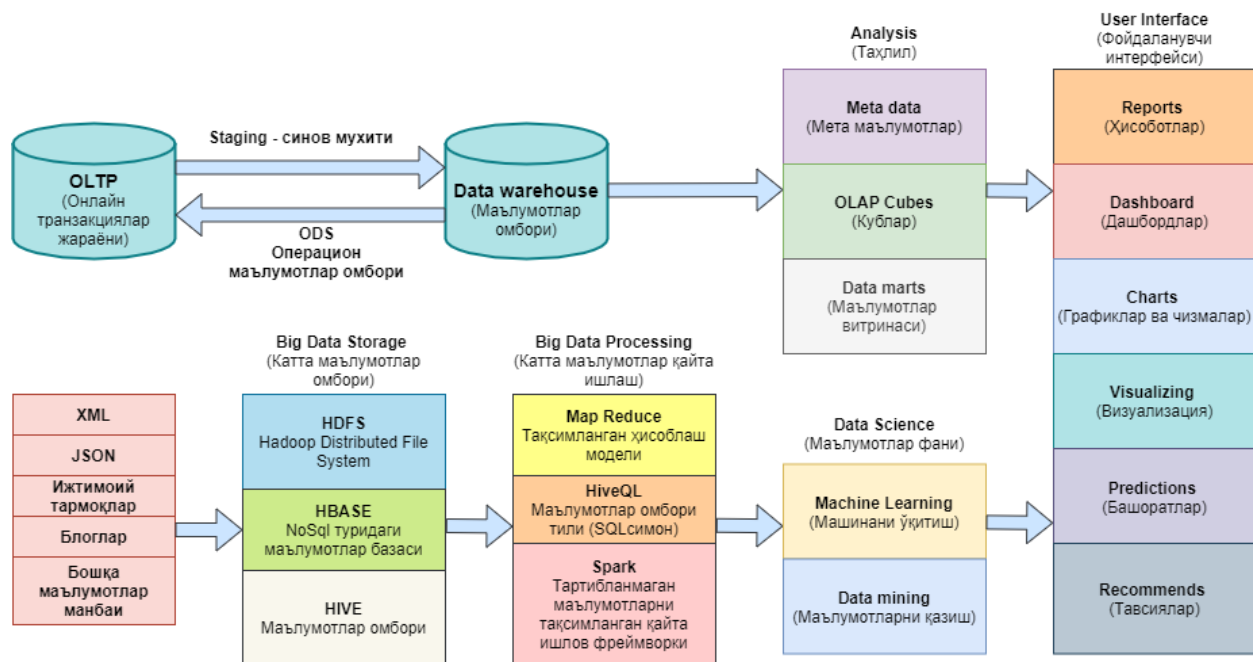


Figure 2. The general architecture of the BI system, which consists of different components

There are potential risks in the implementation of BI systems, among which:

- Implementation of BI systems requires additional costs in the first place. There is a certain level of costs for additional techniques, software tools, and Human Factors.
- The success of the implementation of BI systems depends on the qualification of management personnel, motivation.
- If the analyst and management staff make errors in the data evaluation and classification, the expected results will not be achieved.

- One of the risks is that after attracting active and qualified employees of the business to the implementation process, they can directly affect the current state of the business, not being able to fulfill their duties in business activities.

## CONCLUSION

Now many small business organizations are trying to improve their skills in the field of business analysis, developing this direction. The management staff increasingly understand how valuable the unprocessed data stored in organization systems as a factor is. The collection, storage, analysis, processing, and presentation of data is the fundamental function of BI systems. It is possible to become an intellectual organization based on knowledge formed from the data of the organization with the help of BI systems. They not only increase the productivity of the current work process, but also determine the organization's prospects.

The following conclusions were made during the analysis.

Opportunities and advantages of BI systems:

- increase the efficiency of business processes, automation, development of structure;
- modeling of business activity processes, status within the framework of a single Information System;
- quick analysis of non-standard queries, cases, processes;
- improve the work efficiency of business employees through automation of business processes;
- keep working pace as the data grows exponentially.

Risks of the implementation of BI systems:

- The business of implementing BI systems in the first place requires additional costs. In this, there are a certain level of costs for additional techniques, software tools.
- The success of the implementation of BI systems directly depends on the qualification of management personnel, willingness to make changes to business processes, and motivation.
- Intended results cannot be achieved if the analyst staff, management make mistakes in the evaluation of data, their classification.
- Another one of the risks that may arise in the implementation of BI systems is that after attracting active and qualified employees of the business to the process of implementation, they can directly affect the current state of the business, not being able to fulfill their duties in business activities.

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