узких мест и проблемных зон, а также разработки новых, эффективных методов и инструментов управления. Внедряя оптимизированные процессы в управление логистическими проектами, компании могут опережать конкурентов и добиваться лучших результатов.

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ОПРЕДЕЛЕНИЕ БОЛЬШИХ ДАННЫХ: ИСТОРИЯ ВОЗНИКНОВЕНИЯ И ПОСТУПАТЕЛЬНОГО ИХ РАЗВИТИЯ

DEFINITION OF BIG DATA: THE HISTORY OF ITS EMERGENCE AND ITS PROGRESSIVE DEVELOPMENT

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Аннотация. *В статье проведен анализ внедрения в практику больших данных, которые представляют собой разнообразные данные, поступающие с более высокой скоростью и объем которых постоянно растет.*

Abstract. *The article analyzes introduction of big data into practice which is a variety of data arriving at a higher speed and the volume of which is constantly growing.*

As we have mentioned in our publications earlier, big data is a variety of data that arrives at a higher rate and the volume of which is constantly growing. And there are three main properties attributed to it – diversity, high velocity of arrival, and high volume. And in simple terms, big data is larger and more complex data sets, especially from new data sources. The size of these data sets is already so large that traditional processing programs can no longer handle them [1]. Diversity.

Diversity means that the available data belong to different types. Traditional data types are structured and can be immediately stored in a relational database. With the advent of Big Data, data has started arriving in unstructured form. Unstructured and semi-structured data types such as text, audio and video require additional processing to determine their meaning and support metadata.

Speed. Speed in this context is the rate at which data is received and possibly acted upon. Typically, high-speed data streams go directly into RAM rather than being written to disk. And some smart products that have long been Internet-based operate in real-time or near-real-time. Accordingly, such data requires real-time evaluation and action.

Volume. The amount of data is a very important factor. With large amounts of data, you will need to process large volumes of unstructured, low-density data. And the value of that data is not always known. It could be Twitter feed data, web traffic data, or mobile app data, network traffic, sensor data. Thus, some organizations may receive tens of terabytes of data, while others may receive hundreds of petabytes.

We note here that although the concept of big data itself is not new, the first big data sets started to be used in the 1960-70s, when the world's first data centers and relational databases emerged [2].

But by 2005, businesses began to realize how much data users were creating when using Facebook, YouTube and other Internet services. In the same year, the open source Hadoop platform appeared, which was created specifically for storing and analyzing big data sets. At the same time, NoSQL methodology began to gain popularity.

And the emergence of open source platforms, such as Hadoop and later Spark, played a significant role in the spread of big data, because these tools simplify the processing of big data and reduce the cost of storage.

And as we can see, the volumes of big data have increased by orders of magnitude over the past few years. Huge amounts of data come from the activities of users, but now not only from them. And with the advent of the Internet of Things (IoT), more and more devices are getting connected to the Internet, allowing us to collect data on user activity patterns and product performance. And as machine learning technologies have emerged, the amount of data has grown even more.

Thus, big data has a great potential for development, but its potential is far from being finally realized. And cloud computing has pushed the boundaries of big data even further. Cloud technologies provide truly flexible scalability, allowing developers to deploy clusters to test selective data on demand. In addition, graph databases are also becoming increasingly important, allowing huge amounts of data to be displayed so that they can be analyzed quickly and comprehensively.

It should also be noted that big data has developed two more properties over the last few years: value and reliability.

Data has intrinsic value. But for it to be useful, that value must be unlocked. Equally important, how reliable is your big data and how much can you rely on it?

Moreover, today, big data has become a form of capital. Think about the largest technology companies. The value of their offerings depends heavily on their data, which they are constantly analyzing to improve efficiency and develop new products [3].

In addition, recent advances in technology have significantly reduced the cost of storage and computing, allowing you to store and process ever-increasing amounts of data. Today's technology already allows you to store and process more data for less cost, allowing you to make more accurate and informed business decisions. And extracting value from big data isn't just about analyzing it (that's its own advantage). It's about a comprehensive research process involving deep analytics experts, enterprise users and executives to ask the right questions, identify patterns, make educated guesses and predict future behavior [4].

At the same time, speaking about the great opportunities of big data application, one cannot help but talk about the considerable difficulties and some complexities in the use of big data. Thus, big data is a great opportunity, but also a great challenge.

First of all, big data predictably takes up a lot of space. Although new storage technologies are constantly evolving, data volumes are doubling almost every two years. Organizations still face the challenges of growing data volumes and storing it efficiently [5].

Today, it's not enough to just find great storage. Data must be used to provide benefit, and the extent of that benefit depends on how the data is processed. Clean data, that is, data that is relevant for the customer and organized for effective analysis, requires careful processing. In the meantime, data scientists spend 50% to 80% of their work time processing and preparing data for use.

Finally, big data technologies are advancing at a breakneck pace. For example, a few years ago, Apache Hadoop was the most popular big data technology. And the Apache Spark platform appeared a little later in 2014. Today, the best approach is to use these two platforms together to keep up with the evolution of big data.

Still, how exactly does big data work? Big data allows you to extract valuable new insights that open up new opportunities and business models. But to get started with big data, there are three things you need to do first.

1. Integration Big data technology enables the integration of data from disparate sources and applications. Traditional integration mechanisms such as Extract, Transform and Load (ETL) tools are no longer up to the task. New strategies and technologies are needed to analyze data sets as large as terabytes, or even petabytes. And during the integration phase, data is added, processed and formatted to make it easier for enterprise analysts to work with it.

2. Management Big data requires voluminous storage. The storage solution can be hosted on-premises or in the cloud, or both. You can store data in your preferred format and apply the desired processing requirements (and necessary processing mechanisms) to data sets as needed. Most organizations choose their own storage solution depending on where the data is currently stored. Today, cloud storage has begun to grow in popularity because it supports current computing requirements and allows resources to be leveraged on an as-needed basis.

3. Analysis Investing in big data will pay off when you start analyzing data and taking action based on insights. In doing so, bring a new level of transparency by visually analyzing diverse data sets. Use deep data analysis to make new discoveries. Share your discoveries with others. Create data models using machine learning and artificial intelligence. Put your data into action.

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МАРКЕТИНГОВАЯ ИНТЕРНЕТ-ПЛАТФОРМА ADING ДЛЯ САМОРАЗВИТИЯ

MARKETING INTERNET PLATFORM «ADING» FOR SELF-DEVELOPMENT

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Аннотация*. В статье раскрыта проблема получения необходимой для работы и развития маркетологов информации. Проанализирован белорусский рынок в области информационныхплатформ подобного рода. Разработана концепция белорусской интернет-платформы Ading для маркетологов. Определены перспективы развития данной интернет-платформы.*

Abstract*. The article reveals the problem of obtaining the information necessary for the work and devel-opment of marketers. The Belarusian market in the field of information platforms of this kind is ana-lyzed. The concept of the Belarusian Internet platform Ading for marketers has been developed. Theprospects for the development of this Internet platform have been determined.*

В современном мире люди стремятся получить всю необходимую информацию удобно и быстро. Для этого создаются различные сайты и приложения, которые объединяют в себе множество необходимых функций, упрощая тем самым задачи потребителей. Тенденция «удобно и быстро» актуальна и в профессиональных областях, таких как маркетинг.

Однако в Республике Беларусь в настоящее время прослеживается недостаточность ресурсов, на которых можно осуществлять поиск необходимой маркетинговой информации и выполнять