**BIG DATA**

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Big Data – it is one of the most frequently mentioned terms in IT publications. However, as it often happens with new concepts**,** though the term is short, its meaning is rather vague. So what is Big Data?

The term “Big Data” appeared relatively recently. It belongs to a few names having quite accurate date of birth – the 3rd of September, 2008 when the special issue of the oldest British scientific journal “Nature” devoted to finding an answer to the question “How could technologies allowing to work with huge volumes of data affect the future science? ” was published.

Big Data is a set of approaches, tools and methods for processing structured and unstructured data with huge volumes and significant diversity in order to receive results perceived by the human.As defining characteristics for Big Data, ”three V” are pointed : *volume* (in the sense of magnitude of physical volume), *velocity* ( in the sense of growth rate as well as need for high-speed processing and receiving results ) and *variety* (in the sense of possibility to simultaneously process different types of structured and semi structured data).

Why did data become big?

There are many sources of big data in the modern world. That can be continuously incoming data from the measuring devices, streams of messages from social networks, meteorological data, data streams about location of subscribers of cellular networks, audio and video recording devices, etc. As a matter of fact, the mass distribution of technologies mentioned above and of fundamentally new models of using various devices and internet services was the starting point for the penetration of big data in almost all spheres of human activity. First of all, in research activities, the commercial sector and public administration.

Big data mean big problems.

According to the research of Accenture (Autumn 2014), 60% of companies have already successfully completed at least one project connected with Big Data. The vast majority (92%) of the representatives of these companies was satisfied with the result and 89% said that big data had become an important part of the transformation of their business. Among the remaining respondents, 36% have not thought about introduction of this technology and 4% have not completed their projects yet.

Among the main advantages of Big Data the respondents indicated “the search for new sources of income” (56%), “improved customer experience” (51%), “new products and services” (50%) and “influx of new customers and retaining the loyalty of old ones”(47%). When introducing the new technologies, many companies faced similar problems. For 51% of them the stumbling block was security,for 47% - budget, for 41% - lack of necessary personnel and for 35% - difficulty in integrating with the existing system. Almost all respondent companies (about 91%) are planning to solve the problem of lack of human resourceand to hire Big Data specialists in the near future

Companies are optimistic about the future of big data technologies. 89% believe that they will change business as much as the Internet. 79% of respondents noted that the companies which are not dealing with big data will lose their competitive advantage.

However, respondents disagreed on what should be considered as big data. 65% of respondents consider that it is “large data files”, 60% are confident that it is “advanced analytics and analysis” and 50% believe that this is “visualization tools data. ”

The technology of “big data” is particularly flexible, highly scalable, and is using cloud technologies.Key role in processing and storing large amounts of data belongs to the analytical tools and techniques, such as real-time monitoring, predictive modeling and use of visual data panels. The main feature of used approaches is possibility of processing the information array entirely to obtain more reliable results of analysis.

As a result of use of Big Data technology, the organization has the opportunity to receive important information in a few seconds allowing to increase the efficiency of economic decisions, to respond faster to changes in customer behavior and to identify market trends at the earliest stages in real time.

References:

1. SAS. (2014). *Big data and global development.* Available: http://www.sas.com/en\_us/insights/articles/big-data/big-data-global-development.html.

Last accessed 26th Oct 2014.

1. Sumit Banerjee, John D. Bolze, James M. McNamara and Kathleen T. O’Reilly . (2011). *How Big Data can fuel bigger growth.* Available: http://www.accenture.com/sitecollectiondocuments/pdf/accenture-outlook-how-big-data-can-fuel-bigger-growth-strategy.pdf .

Last accessed 28th Oct 2014.

1. Wikipedia. (2014). *Big Data .* Available: https://en.wikipedia.org/wiki/Big\_data.

Last accessed 28th Oct 2014.

1. tadviser. (2014). *Большие данные (Big Data) .* Available: http://www.tadviser.ru/index.php/%D0%A1%D1%82%D0%B0%D1%82%D1%8C%D1%8F:%D0%91%D0%BE%D0%BB%D1%8C%D1%88%D0%B8%D0%B5\_%D0%B4%D0%B0%D0%BD%D0%BD%D1%8B%D0%B5\_(Big\_Data)#cite\_note-a-0.

Last accessed 28th Oct 2014.