THE CONCEPT OF BIG DATA AND ITS APPLICATION IN LEGAL ANALYSIS

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ABSTRACT

This article analyzes the essence of the concept of Big Data, its application in the field of legal analysis, and the role of information technologies in regulatory and legal processes. It also highlights the importance of Big Data in making legal decisions, improving judicial practice, and monitoring legislation.

In modern society, due to the sharp increase in information flow, the concept of "Big Data" has gained significant importance in the fields of economy, politics, education, medicine, and especially legal analysis. Analyzing large volumes of data has made it possible to make legal decisions quickly, accurately, and objectively. Therefore, Big Data technologies are considered one of the main drivers of digital transformation in the legal field.

In recent years, the digital transformation process has deeply penetrated all spheres of socio-economic life on a global scale. In particular, the application of Big Data technologies in legal analysis and governance systems has become a pressing issue in the modern era. The ability to analyze large databases, systematize them, and make predictive decisions serves to make state governance, legislative monitoring, judicial practice, and the activities of law enforcement agencies more efficient.

In the Republic of Uzbekistan, the introduction of digital technologies, including the application of Big Data systems in legal analysis, has become one of the priority directions of state policy. In this regard, a number of normative-legal documents have been adopted, which serve as the basis for forming a digital economy and e-government system in the country.

In particular, the "Digital Uzbekistan – 2030" strategy[1] approved by the Decree of the President of the Republic of Uzbekistan No. PF-6079 dated October 5, 2020, sets out tasks to form a governance system in state bodies based on digital technologies, artificial intelligence, and big data (Big Data), as well as to create a unified platform for data exchange. This strategy serves as an important legal foundation for accelerating digital reforms in the legal sphere as well.

Furthermore, the Resolution of the President of the Republic of Uzbekistan No. PQ-5116 dated April 28, 2021, "On Measures to Improve the System of Ensuring Information Security and Protecting Personal Data in the Digital Economy," clearly defines requirements for the security of data processed through Big Data systems and the protection of personal data during their analysis.

In addition, the Law "On Electronic Government" (December 9, 2015, No. O'RQ-395) has established the legal foundations for the use of information systems, electronic document circulation, and databases in the activities of state bodies. Within the framework of this law, Big Data technologies are regarded as a key tool for providing public services, automating legal analysis, and strengthening public oversight. The application of Big Data technologies in the legal field, on the one hand, increases the objectivity of legal analysis, and on the other hand, makes the process of making legal decisions more transparent. For example, the "Legal Information" system under the Ministry of Justice of the Republic of Uzbekistan, as well as the Supreme Court's "E-Sud" electronic platform, are information systems based on Big Data elements. Through them, the database of court decisions, legislative acts, and normative documents is

regularly updated and analyzed.

Thus, the introduction of Big Data technologies into the field of legal analysis is an important step for Uzbekistan on the path to building a rule-of-law state and a digital society. This process not only simplifies the practice of law enforcement but also enhances the efficiency of legislative analysis, legal monitoring, and judicial activities. At the same time, there is a need to improve legal mechanisms related to information security, data ownership, and the protection of personal data for the rational use of big data.

In our opinion, it is necessary to further improve the specialized normative-legal framework for applying Big Data in legal analysis. In Uzbekistan, the digital economy and e-government system are developing rapidly. The "Digital Uzbekistan – 2030" strategy outlines tasks for introducing advanced technologies such as Big Data, artificial intelligence, and blockchain into state governance, the judicial system, and legislative processes. In particular, legal databases in the Ministry of Justice, the Supreme Court, and other bodies are being digitized, and automated analysis systems are being implemented.

Big Data technologies are creating a fundamental shift in the legal analysis process, elevating it to a new level. As a result of their implementation, data processing, storage, and analysis in legal activities are significantly accelerated, while accuracy, transparency, and objectivity in making legal decisions are markedly increased. Today, efficiency is being achieved through the use of large volumes of data in areas such as judicial practice, legislative analysis, contract document monitoring, and crime prediction.

However, alongside the widespread application of Big Data technologies in the legal field, special attention must be paid to legal, ethical, and technical security issues. Because issues such as the protection of personal data, the risk of algorithmic discrimination, and cases of illegal use of data remain highly relevant. Therefore, establishing strict normative-legal oversight by the state, ensuring information security, and improving mechanisms for protecting human rights are of critical importance when introducing such technologies.

In the future, Big Data is expected to become an integral part of legal analysis systems and serve as a key foundation in shaping the concept of digital justice. It will enable the pre-analysis of court decisions, reduction of corruption risks, optimization of law enforcement activities, and strengthening of citizens' legal protection. As a result, the legal system will develop in a more open, reliable, and modern form that meets the demands of a digital society.

In our opinion, the following recommendations can be made in scientific, practical, and institutional directions on this topic:

1. It is necessary to adopt a special law on working with Big Data, which clearly defines the legal boundaries for collecting, storing, analyzing, and using data.
2. Align the personal data protection system with international standards (for example, utilizing the experience of the European Union's GDPR).
3. Introduce accountability mechanisms for algorithmic decisions—i.e., develop norms specifying who is responsible for a legal decision made based on incorrect analysis.

References:

1. O'zbekiston Respublikasi Prezidentining. "Raqamli O'zbekiston – 2030" strategiyasini tasdiqlash to'g'risidagi qarori (2020).
2. O'zbekiston Respublikasi Oliy sudi. (n.d.). Elektron sud tizimi to'g'risidagi ma'lumotlar portali. https://www.sud.uz
3. Organisation for Economic Co-operation and Development (OECD). (2022). Data-driven innovation for growth and well-being. OECD Publishing.
4. Mayer-Schönberger, V., & Cukier, K. (2013). Big Data: A revolution that will transform how we live, work, and think. London: John Murray.
5. Kitchin, R. (2014). The data revolution: Big data, open data, data infrastructures & their consequences. SAGE Publications.
6. O'zbekiston Respublikasi Adliya vazirligi. (n.d.). Huquqiy axborot tizimlarini raqamlashtirish bo'yicha hisobotlar. https://www.minjust.uz
7. Texnoman. (n.d.). Big Data'ning asosiy 8 atamasi. Texnoman.
https://www.texnoman.uz/post/big-dataning-asosiy-8-atamasi_.html
8. Martech Zone. (n.d.). Big Data foydalari (Benefits of Big Data). Martech Zone.
https://uz.martech.zone/benefits-of-big-data/
9. DesignRush. (n.d.). How much data is created every day? DesignRush.
https://www.designrush.com/agency/big-data-analytics-companies/trends/how-much-data-is-created-every-day
10. RB.ru. (n.d.). Big Data in 8 terms. RB.ru.
https://rb.ru/howto/big-data-in-8-terms/