



## The potential use of AI in public procurement processes in CEE

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The necessity to digitalise and use AI in all business sectors is irrefutable and public procurement is no exception. The more advanced digitalisation is in a public procurement system, the greater the chances are for business continuity in the tender sector.

In recent years, significant efforts have been made all over Europe to digitalise public procurements. Public procurement in CEE is still administratively burdensome and time-consuming, with several complicated forms to be filled out which require significant human effort by both the contracting authority and the tenderer. Our CEE public procurement team has identified areas in public procurement where AI could be used to make tenders in CEE more efficient. We compiled two AI papers to set out the benefits AI can bring to the tender sector to make it a more efficient process. In the first paper we covered the importance of data, how AI may help prepare public contract award proceedings as well the advantages chatbots could add to public procurements. In this second AI paper we focus on how to take pricing, contract management and billing in public procurement to a new level with AI.



### The importance of data

Many governments are now using AI solutions to improve public-sector productivity in different sectors such as transport, healthcare and public services. In 2019 at the World Economic Forum, the world's first public procurement guidelines for AI were released, emphasising the vast potential of using AI in the public procurement sector.

AI solutions provide an opportunity to monitor and analyse extremely complex and large sets of procurement data in order to automate or solve complex tasks more efficiently than humans. The common areas where AI can bring value to public procurement are:

- **Anomaly Detection:** AI can monitor large quantities of public tender data and detect any anomalies, e.g. unexpected changes in purchase prices and allegations of fraud by using machine learning algorithms.

- **Risk Analysis and Pattern Recognition:** AI can capture and analyse millions of different data sources and provide a clearer picture of the profiles of procuring entities and bidders and their patterns to be able to identify and predict whether this particular partner is reliable or not.
- **Automate manual tasks:** AI can automate many time-consuming tasks for businesses, such as repetitive similar procurements, performance reporting, etc.

There is an increasing number of examples of AI being used in public procurement. In 2016, Ukraine launched a fully online public procurement platform called Prozorro. It has since been recognised as one of the most innovative public procurement systems globally with 3,000 to 5,000 new tenders published in the system every day.

One of the main goals of Prozorro was to eliminate corruption in the public procurement sector. In 2018, the State Audit Service began the automatic verification of tenders in Prozorro based on 35 risk indicators. The more indicators that are flagged, the greater the likelihood that the auditors will verify the tender. Practice shows that fraudsters have easily adapted their practices to cheat the system regarding risk indicators.

In parallel, a team of experts created and started training a new AI system to monitor public procurements called Dozorro. It is based on software which learns to identify tenders with a high risk of corruption and is vastly different from risk indicators. The results of the first beta test in 2018 showed that AI identified 26% more tenders with an unfair selection of the winner, 37% more tenders where bidders were unfairly disqualified, and a 298% increase in events of collusion between the bidders, than humans. a 298% increase in events of collusion between the bidders, than humans.

The system is developing every day and is expected to be fully operational soon.



## Sourcing: AI may help prepare public contract award proceedings

AI-based tools are already used in some purchasing departments to analyse market conditions and trends, to identify potential contractors and sources of supply, and to compare products and solutions available on the market. They facilitate efficient and flexible supply chain management.

It seems that such tools cannot yet be used to award a public procurement where the contractor should be selected in a formal and competitive procedure. However, this is not completely ruled out, and the use of AI may be beneficial in preparing a tender procedure.

Contracting authorities often find it difficult to define their needs accurately and to prepare a description of the contract subject that complies with the best possible solutions. They may also find it hard to define the conditions for awarding a contract or to estimate the contract's value accurately. Finally, the contracting authorities may experience difficulties in anticipating significant changes that may occur during the performance of the contract (e.g. changes in raw material prices and the appearance of other technologies), and which should be reflected in the terms of the contract.

Public procurement law provides measures that may be used to make these tasks easier. For example, before initiating contract award proceedings, contracting authorities can conduct preliminary market consultations. During these consultations they can seek advice from independent experts or from market participants and potential contractors. Contracting authorities may also allow tenders to be submitted, including, under the basic provisions of the terms of reference, a different method for performing the contract than that defined by the contracting entity. In some specific cases, contracting authorities are also allowed to use negotiated procedures of awarding contracts.

These solutions are useful however they are based only on information and suggestions provided by a small number of entities: participants in initial market consultations and tenderers submitting variant bids or participating in negotiations. To use them would involve considerable time and resources.

Against this background, the possibilities offered by AI appear very impressive. The ability to analyse large amounts of data in a very short time, without the need to involve external entities, and the ability to predict future trends are just two of the many potential benefits of using AI in preparing a public procurement procedure.



## The use of chatbots

The main purpose of using chatbots is to automate either simple or complex tasks to improve the efficiency of business operations. As public procurement procedures are overall still administratively burdensome in CEE, advanced chatbots have great potential in this area. While chatbots have not been tested in public procurement in CEE yet, the interest for them and applicability in the public sector is increasing in the USA. In San Francisco PAIGE (Procurement Answers and Information Guided Experience), an AI-based chatbot application for San Francisco city procurement officials, is responsible for assisting government agencies with digital public procurement processes. PAIGE is widely used by the contracting authority to support the efficiency of IT procurements and frees up a significant amount of human resource. Through Machine Learning (ML) technology, chatbots learn complicated public procurement policies and procedural rules. From this, all tender parties can benefit hugely in the next few years. We envisage the following key potentials:

- Transparency and consistency: chatbots can provide step-by-step guidance for contracting authorities when compiling tender documentation in the preparation phase, so the common problem of using inadequate or outdated templates can be eliminated, which will also save time. Similarly, a trained chatbot is able to support bidders complete and submit their bids which are not only formally compliant, but which also comply with the applicable public procurement processes by giving the same guided and easy-to-follow walkthroughs.
- Efficient query management: permitted communication between purchasers and bidders has several competition law related constraints, which are difficult to follow in practice queries arise in the process. An advanced chatbot has the potential to become the single point of contact for internal and external queries. According to recent studies, the technology should be able to answer 80% of queries. As a result, human experts will be able to focus on the more complex and significant queries. Several companies are already successfully using this chatbot capability in their procurement portals in the private sector. It is high time to make it more common in CEE for public procurements.
- Better contract management: chatbots can find the relevant data necessary to track performances easily, e.g. when a contract will expire, how force majeure is worded, what the prices in similar past tenders were, etc. AI-powered chatbots could highlight key information that people may miss and flag potential issues.

In our view implementing advanced AI chatbots in CEE public procurement procedures could have a number of advantages, mostly beneficial to efficiency and transparency. Naturally, the use of this tool might face challenges, e.g. a lack of sufficient and classified data and a lower level of digitalisation of the public sector. However, the countless benefits AI chatbots could provide should exceed the potential implementation obstacles.

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