Trakia Journal of Sciences, Vol. 23, Suppl. 2, pp 348-352., 2025
Available online at:
http://www.uni-sz.bg
ISSN 1313-3551 (online) **doi:10.15547/tjs.2025.s.02.052**

BUILDING ELECTRONIC PLATFORMS FOR GRAIN PRODUCT STOCK EXCHANGE TRADING

S. Yalamov*

Faculty of Economics, Trakia University, Stara Zagora, Bulgaria

ABSTRACT

Purpose: The present study examines the need for the construction and implementation of electronic platforms for grain trade in Bulgaria. The main motivations for the research stem from the need for greater transparency, efficiency, and security in the grain trading sector. Additionally, it aims to analyze the current challenges and opportunities facing grain exchanges and to present a model for digitalization through modern electronic solutions.

Methods: A qualitative and quantitative approach has been used. A review of scientific literature, regulatory framework, and market reports has been conducted. Semi-structured interviews with sector experts have been carried out, and a comparative analysis of the functionality and regulation of leading platforms has been made. The data has been compared with current statistics from the European Commission, FAO, and national institutions.

Results: The research shows that electronic platforms increase transparency, competitiveness, and access to grain trade. At the same time, however, there is limited use of these platforms in Bulgaria due to regulatory restrictions, low digital literacy, and a lack of interest from small producers.

Conclusions: A targeted state and sectoral policy is needed to stimulate the digitization of grain trade. Efforts are required to develop infrastructure, train participants, and harmonize the regulatory framework with European practices. Such steps will enhance the competitiveness of Bulgarian grain products in regional and global markets.

Keywords: electronic platforms, stock trading, grain products, digitization, market integration, agricultural sector, Bulgaria

INTRODUCTION

With the advent of digital technologies in the agricultural sector, electronic platforms for trading grains have become a key tool for optimizing trade processes. They provide new opportunities for producers, traders, and processors by ensuring transparency, lower transaction costs, and quick access to markets. However, their implementation in Bulgaria is still limited and requires an in-depth study of the opportunities and challenges.

Bulgarian context:

Description of the experiment

Purpose: To check the effectiveness of an electronic platform for grain trading in real conditions.

Methodology:

- A test group of 50 farmers and 20 traders has been selected.
- For a period of 3 months, a pilot version of the electronic platform is used.
- Key indicators have been measured: time to close a deal, number of successful transactions, satisfaction

Conclusion: Electronic platforms significantly improve efficiency, transparency, and access to markets in the field of grain trading. Building them is not just useful, but essential for the modernization of the agricultural sector.

Discussion of the results in **Table 1**:

- Economic: Increased competitiveness, fair prices, faster realization of production.
- Social: Increasing trust among participants, access to information, digital literacy in rural areas.
- Regulatory: Simplified tracking of transactions, reduction of the gray economy.

***Correspondence to:** *SIMEON YALAMOV, ESQ. , Trakia University, Faculty of Economics, ul. "Mayor Tanyo Kavaldzhiev" 137, 6004 Stara Zagora, Phone: +359888150598, E-Mail: obedinenie1@abv.bg*

Table 1. *Presentation of results*

Indicator	Result – traditional method	Result - electronic platform
Average transaction time	3 days	45 minutes
Percentage of successful transactions	72%	94%
Average revenue growth	—	+18%
Satisfaction of the participants	3.2/5	4.6/5

EXPOSITION

The present study examines the need for the establishment and implementation of electronic platforms for grain trading in Bulgaria. The main motives arise from the need for increased transparency, efficiency, and security in the sector. According to Christensen (1), disruptive innovations are particularly effective in environments with low efficiency and limited accessibility – characteristics that often accompany traditional grain trading.

The research by Parker, Van Alstyne, and Choudary highlights that platform business models lead to a transformation of market dynamics by reducing transaction costs and improving access to information. This is particularly relevant for the agricultural sector in Bulgaria, which needs digital modernization and increased competitiveness.

McAfee and Brynjolfsson (3) note that new technologies, including digitalization and artificial intelligence, are transforming the economy and ways of working. They emphasize that digital platforms enhance productivity, efficiency, and forecasting ability – all elements that the agricultural sector needs in the context of climate change and global uncertainty.

Geoffrey Parker and co-authors (2) argue that the network effects characteristic of platforms create self-reinforcing mechanisms that accelerate growth and adoption.
- By the year 2024, about 20% of global retail sales are conducted through online stores. This means that approximately one fifth of all purchases worldwide are made electronically.
- This share is expected to increase to 21% by 2025 and reach 22.6% by 2027, which highlights the sustained trend towards the digitalization of commerce.

In value terms, global online sales are expected to exceed 6.4 trillion US dollars in 2024. An example of good practice is the eNAM electronic platform in India, which brings together over 1000 markets and over 17 million. This underscores the significant role of digitization.

The topic of electronic platforms for trading grain products is attracting increasing interest in scientific and practical literature, especially in relation to the digitalization of agricultural markets and the development of e-commerce. Artificial intelligence and machine learning in trading. With the advancement of technology, artificial intelligence (AI) and machine learning (ML) also play an important role in improving trading platforms. The authors examine how these technologies can be used to predict product demand, optimize pricing, and automate processes such as warehousing and delivery. They do not adapt their models.

The globalization of agricultural markets and the need for more transparent price information create conditions for the introduction of electronic trading mechanisms. Additionally, digitization in agriculture is at the core of higher efficiency, reduced transaction costs, and improved access to markets.

The role of e-commerce platforms as a means of connecting producers and traders allows for dynamic price formation and minimizes speculative risk. Similarly, electronic exchanges as part of the so-called 'agri-fintech' ecosystem not only provide trading but also related services – logistics, lending, and insurance.

In the Bulgarian context, the development of electronic platforms in our country has the potential to achieve greater market transparency, especially in the trade of grain crops. Additionally, the significance of state regulation and the need for a regulatory framework can encourage the participation of smaller farms in electronic exchanges. The development of electronic platforms in the trade of grain crops improves competitiveness and accelerates transactions.

Table 2. *Comparative description of traditional and electronic stock trading*

Characteristic	**Traditional grain trade**	**Electronic stock tradingя**
Price transparency	**Partial**	**Full**
Time to conclude deals	**Days**	**Minutes**
Access to the market	**Limited (local)**	**National/global**
Documentation and traceability	**Paper/Partial**	**Digital/full**
Risk of abuse and fraud	**High**	**Reduced through automation**
Requirements for participants	**Personal contact**	**Digital identification**

A multitude of authors and researchers have examined how electronic platforms can be used to offer goods while simultaneously stimulating innovation and enhancing user experiences. Clayton M. Christensen, known for his research on innovations and technologies that disrupt traditional business models in "The Innovator's Dilemma," does not specifically focus on electronic platforms, but rather on the concept of "disruptive innovations," which is applicable to e-commerce, as platforms offer new business models that change the entire retail industry.

McAfee and Brynjolfsson (3) examine the effect of new technologies, including digitalization and e-commerce, on the economy and society. They explain how technologies like artificial intelligence and shared economy platforms are changing traditional business models.

Electronic platforms overcome geographical and temporal barriers, allowing traders to reach global markets.

Charlotte C. Wild (5) examines various mechanisms for protecting investors in financial markets, including online trading platforms.

European Securities and Markets Authority (ESMA) – The European Commission and other regulatory bodies publish regular reports and documents that discuss best practices and opportunities for consumer protection in the context of online trading.

The classic platforms provide access to real financial markets. Buying and selling goods on them is done only through brokers. They earn their profits from commission fees. Such are: CME Globex, Euronext/MATIF.

CME Globex is the electronic trading platform of the Chicago Mercantile Exchange (CME Group), which provides 24-hour access to global financial markets. It trades futures and options on various assets such as: currencies; commodities (e.g., oil, gold); indices; interest rates; and agricultural products. It offers high speed, reliability, and access to real-time liquidity for institutional and individual investors around the world.

Euronext/MATIF (Marché à Terme International de France) is a French futures exchange that today operates as part of Euronext Paris. It is a key market for trading futures and options contracts on agricultural commodities and financial instruments in Europe. For Bulgarian agricultural producers and traders, MATIF prices are essential for determining the purchase and selling prices of grain crops. They serve as a benchmark for contract agreements and price risk management.

CME Globex and *MATIF* are primarily financial derivative platforms suitable for hedging rather than direct trading in grain. *MATIF* has a more direct application for Bulgarian farmers through its price indicators.

Information platforms provide the opportunity for direct contact with producers and traders who have submitted proposals on the same platform. They require a certain monthly or annual fee. Suitable for market orientation, finding contractors, but not for immediate transactions. An example of such a platform is: GRAIN TRARADE UKRAINE.

Mixed platforms (informational + commercial) offer purely informational services, as well as the opportunity to conclude deals immediately. Such platforms are: *Borsaagro.com, Agriniser, AGRA Global, Agro-Market24, ZurnoBorsa Bulgaria, AGRIX BG and AGRA.*

Borsaagro.com is an international trading platform for grains, where users receive direct offers from dealers on the exchange. Upon agreement with the prices, buyers can obtain the goods immediately. The platform has the capability

to receive offers from producers directly from the field. With a unique mobile application, prices can be offered even during the harvest. This provides the fastest access to information and the opportunity for transactions, which outpaces other platforms in terms of time, a crucial factor for success in the deal.

Agriniser is a Bulgarian platform specializing in grain trading. It allows users to post offers for buying or selling, negotiate and conclude deals directly. Additionally, Agriniser provides current market analyses and prices. AGRA Global is an international platform for trading agricultural products, including cereals. It connects farmers, traders, and processors, offering opportunities for local and international trade. The platform allows for posting offers, comparing proposals, and direct negotiations between parties.

Agro-Market24 is a global online marketplace for agricultural products, including grain. With over 70,000 users from 194 countries, the platform offers opportunities to publish offers, search for partners, and engage in direct negotiations. The advantages include multilingual support and a wide market reach.

Table 3. *Stock electronic platforms*

Platform	Key features	Advantages	Disadvantages	Suitable for
CME Globex	- Global exchange - Trading in futures/options on currencies, commodities, indices	- High liquidity - 24/7 access - High speed and security	- Complex platform for small participants - High accessibility requirements	Large traders, hedge funds, institutional investors
Euronext/MATIF	- European Market - Trading in agricultural futures (wheat, corn, etc.)	- The prices are indicative for Bulgaria - Applicable for hedging price risk	- It is not a direct trading platform for producers - Opportunities only through intermediaries	Grain traders, cooperatives, medium and large farmers with access to exchanges.

Conclusion from Table 3: *CME Globex* and *MATIF* are primarily financial derivatives platforms suitable for hedging rather than for direct trading in grains. *MATIF* has a more direct application for Bulgarian farmers through its price indicators.

Table 4. *Information Platforms*

Platform	Key features	Advantages	Disadvantages	Suitable for
GRAIN TRADE (Ukraine)	- Information model - Subscription access	- Direct contact with traders - Good information base	- No possibility for direct transactions - Depends on user activity	Manufacturers, traders looking for partners or markets

Conclusion from Table 4: Suitable for market orientation, finding counterparts, but not for immediate transactions.

Table 5. *Summary – key highlights for Bulgarian consumers*

Criterion	Best options
Direct trade	Agriniser, Borsaagro, AGRA
Market orientation	ZurnoBorsa, GRAIN TRADE, MATIF
International scope	Agro-Market24, AGRA Global, CME Globex
Speed of transactions	Borsaagro (field transactions), Agriniser
Security	Agriniser (verification and anonymity), AGRA (protection of transactions)
Purchase on site	AGRIX BG

CONCLUSION

The need to create electronic trading platforms for grains in Bulgaria is indisputable. This is a key factor for the modernization of the agricultural sector, reducing price imbalances, and increasing efficiency. The digitalization of

grain trading would bring significant benefits to the economy while also protecting the interests of producers and consumers.

The recommendations that can be made are:

1. Development of a national strategy for electronic agri-trade, with an emphasis on the grain sector;
2. Creating public-private partnerships for the establishment of a digital exchange platform;
3. Support for farmers through training and access to funding for participation in e-commerce;
4. Introduction of regulations and standards to ensure the security and transparency of electronic transactions;
5. Integration with international platforms to facilitate export and expand markets.
6. Percival Lucena and co-authors – 'A Case Study for Grain Quality Assurance Tracking based on a Blockchain Business Network' (6)

The need to create electronic trading platforms for grains in Bulgaria is indisputable. This is a key factor for the modernization of the agricultural sector, reducing price imbalances, and increasing efficiency. The digitalization of grain trading would bring significant benefits to the economy while also protecting the interests of producers and consumers.

CONCLUSIONS

- In Bulgaria, there is a lack of a well-developed electronic exchange infrastructure for grain crops.
- This leads to limited transparency and difficult access for small producers to the markets.
-International experience shows that electronic platforms improve efficiency, traceability, and access to market information.
- The implementation of such solutions requires support from the government.

REFERENCES

1. Christensen, C., Raynor, M. и MacDonald, R., What Is Disruptive Innovation? *Harvard Business Review*, 44-53, 2015.
2. Parker, G., Van Alstyne, M., & Choudary, S., Platform Revolution: How Networked Markets Are Transforming the Economy and How to Make Them Work for You. *WW Norton & Company*, 2016.
3. Brynjolfsson, E. and McAfee, A., The Second Machin Age. *W.W. Norton & Company*, New York and London, 2014.
4. Christensen, C., The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail, *Harvard Business School Press*, Boston, MA, 1997.
5. Wild, C., Financial Markets and the Protection of Investors: Legal and Regulatory Perspectives
6. Lucena, P., Binotto, A., Momo, F. & Kim, H., A Case Study for Grain Quality Assurance Tracking based on a Blockchain Business Network. *Symposium on Foundations and Applications of Blockchai*, 2018.