# Digitalization and AI in Capital Markets

**BORSA İSTANBUL**

*Benchmark for Investment*

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# Key Drivers for Digital Transformation

- Digital transformation is driven by several key drivers:
  - **Customer Expectations:** Customers expect businesses to have a strong digital presence, provide personalized experiences, and optimize operations.
  - **Data Analytics:** Data analytics can help businesses gain insights into customer behavior, market trends, and other performance indicators.
  - **Agility:** Digital transformation can help businesses become more agile and responsive by streamlining processes, reducing manual labor, and increasing department collaboration.
  - **Cost Savings:** Automating repetitive tasks can reduce the need for human intervention, allowing employees to finish their work quickly.
  - **Regulatory Compliance:** Regulatory compliance can be ensured by using intelligent document processing software to automate data extraction and processing.
  - **Talent Acquisition and Retention:** Talent acquisition and retention are also key drivers of digital transformation, as employees expect access to the latest digital tools and technologies.
  - **Workflow Efficiency:** Increased workflow efficiency is another key benefit of digital transformation, resulting in cost savings and increased productivity.

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# Digitalization in Capital Markets - Technology

- **Blockchain technology** is being used to create more efficient and secure market infrastructures. SIX Digital Exchange (SDX) is building a robust infrastructure based on DLT blockchain technology to enable the issuance, trading, settlement, and custody of digital assets.

- **Artificial intelligence (AI)** is being used to improve the accuracy and speed of market data analysis. For example, Nasdaq has developed an AI-powered platform called Nasdaq Analytics Hub that provides investors with real-time market data and analytics.

  - Machine learning has the potential to enable institutions to do more in capital markets, move faster, and move with greater accuracy. It allows institutions to process large amounts of data quickly and accurately, leading to more informed decision-making.

  - AI enhances efficiency, safety, and performance in capital markets by simplifying deal-making processes, improving return on investment portfolios, identifying and reporting anomalies, and implementing risk management solutions.

- **Cloud computing** is being used to provide more flexible and scalable market infrastructures. For example, London Stock Exchange Group has migrated its trading platform to the cloud, which has enabled it to reduce costs and improve scalability.

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# Digitalization in Capital Markets – Use Case Examples

- **Trading:** AI-powered trading platforms can help traders make better decisions faster and automate their trading activities.

  - Goldman Sachs has developed an AI-powered trading platform called Marquee that provides clients with real-time market data and analytics. The platform uses machine learning algorithms to analyze market data and provide insights into trading opportunities.

- **Compliance:** AI can be used to automate compliance tasks, such as KYC/AML checks and trade monitoring.

  - JP Morgan Chase has developed a machine learning algorithm that can analyze legal documents and extract important clauses. The algorithm has been used to analyze over 12,000 commercial credit agreements in seconds, a task that would have taken lawyers over 360,000 hours to complete.

- **Investment Research and Risk Management:** AI can be used to analyze large amounts of data to identify investment opportunities and to develop more sophisticated risk models and identify and manage risks more effectively.

  - BlackRock has developed an AI-powered tool called Aladdin that helps investors manage risk and make investment decisions. The tool uses machine learning algorithms to analyze data from various sources and provide insights into market trends and investment opportunities.

- **Customer service:** AI can be used to provide personalized customer service and support.

# BISTECH System

**BISTECH**

With BISTECH transformation Borsa İstanbul created one of the World's most advanced exchange technologies

## BISTECH Features

- Low Latency (Under normal conditions <100 microsecond)

- Uptime (Continuous trading)

- Multi-asset (All products in the same platform)

- Multi-platform (integrated trade, post-trade, risk management, market data, index calculation, surveillance systems)

- Standard Protocols  FIX and OUCH for order entry ITCH and TIP for market data

Borsa İstanbul's brand-new, environmentally-sensitive data center offers co-location services and facilitates high-frequency and algorithmic trading, and provides faster access to investors in remote locations.



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# BISTECH Products

## BORSA İSTANBUL

Trading: **Genium INET Trading**

Pre-Trade Risk Management: **Genium INET TradeGuard**

Surveillance: **SMARTS Integrity**

Index calculation: **ICS II**

Market Data Dissemination: **Genium Market Info (GMI)**

Data Warehouse: **DWH**

## TAKAS İSTANBUL

Clearing: **Genium INET Clearing**

Settlement: **X-Stream CSD**

Risk Management: **Genium Risk Manager - Sentinel**

# International Technology Services

**Services provided in the fields of Testing, Migration, Integration and Business Advisory, more specifically:**

- Installation

- Integration

- Updates

- Data migration

- Application and acceptance tests

- Know-how transfer

- Training

- IT consultancy

Technology services

- being provided to exchanges in **the Middle East and Asia Pacific**

- also being discussed with exchanges in **Turkic countries, Balkans and the Middle East**

- disseminating real time market data of **Sarajevo Stock Exchange (SASE), Montenegro Stock Exchange (MNSE)** and **Macedonian Stock Exchange (MSE)**

**+ 200 IT personnel** including analysts, developers, testers and system integrators

Thanks

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