

Digitalisation and cyber security

Digitalisation

In line with KMG's Development Strategy until 2031, digitalisation is to focus on specific operational business tasks in production, ultimately yielding direct financial gains which will result in improved automation and digitalisation of corporate business processes, with a view to improving efficiency and achieving ever higher KPIs.

In order to successfully implement automation and digitalisation tools, the Company analyses existing business processes by describing them, identifying bottlenecks, and developing target business processes with digitalisation in mind.

As an example, implementation of a pilot project titled "Travel Management" at EMG in 2023 resulted in the project's ongoing rollout at OMG, KBM, and MMG. It is aimed at fostering a safe driving culture, improving transport safety and simplifying the workflow for owners of the transport management process.

In the reporting year, transport management was analysed at OMG, MMG, Oil Services Company, Oil Transport Corporation, KTO (Atyrau and Zhezkazgan Oil Pipeline Departments), and KMG-Security.

Results of the review and recommendations on how to improve the processes were submitted to the executive management of respective subsidiaries. Work is underway to develop standalone action plans to rectify non-compliances identified during the review.

In December 2022, KMG approved a programme for developing field digitalisation. The new tool is aligned with a much-needed comprehensive approach to digitalising all of KMG Group's upstream assets and introduction of unified systems for data collection and analysis across all fields.

Also, 2023 saw the approval of road maps to develop digitalisation and automation of EMG and OMG for 2023-2027.

EMG successfully ran a pilot project for a digital system of electronic work permits in order to improve the process and enhance employee safety.

EMG also introduced a speech recognition module as part of efforts to digitise work acceptance certificates for well servicing with a view to improving business processes and automating document flow. Relying on machine learning algorithms, the module enables conversion of audio records into electronic text, which will help to considerably simplify the process of preparing and submitting daily reports while also contributing to greater automation in creating work acceptance certificates for well servicing operations.

Work is also underway to implement an advanced process control (APC) system at Atyrau Refinery's units. The APC system automatically adjusts process parameters to achieve consistent output of oil products and prevent any emergency shutdowns by eliminating human error. To date, the APC system has been introduced at the ADU-2 primary oil refining unit and AVDU-3 atmospheric crude distillation unit.

In order to ensure transparency of processes and remove red tape in approving and signing work acceptance certificates, efforts began to roll out the Online Work Acceptance Certificate project at OMG, KBM, MMG, and Atyrau Refinery.

OMG also initiated work under the Electronic Job Order project to create and edit job orders, automatically check all completed fields, have a unique number automatically assigned to each order, and arrange for multi-level coordination and approval of job orders with many process participants. With this project, users will get notifications about the status of and changes to job orders and will be able to build reports incorporating various metrics linked to job orders. The solution is expected to be rolled out across other subsidiaries and associates.

Digital KMG

For the first time ever, KMG Group organised Digital KMG, a practical forum on digitalisation. The forum served as a platform for businesses to share their experience in digitalisation, discuss approaches to implementing digital solutions, identify corporate needs for IT products, and create a concept for digital development.

The event brought together around 100 managers and personnel of departments for automation, information technology and digitalisation of KMG's Corporate Centre, subsidiaries engaged in oil exploration, production and transportation, and oilfield services companies.

The forum discussed the impact that digital trends have on the oil and gas industry, along with ongoing and potential projects in digitalisation and comprehensive IT infrastructure for companies. The event's programme featured a session on design thinking, resulting in a list of open questions related to digitalisation of KMG's subsidiaries and associates.

LSS forum

During the year, KMG held the 6th Conference on Lean Six Sigma for the Upstream and Downstream business segments.

The conference aimed to engage employees of KMG Group into operational optimisation and efficiency improvement efforts, instil a process of continuous improvement at all levels of the Company, and host an annual contest for the best Lean Six Sigma project of the year.

The event's programme included training for executive sponsors of Lean Six Sigma chosen from among KMG managers, work in groups, and presentation of the best Lean Six Sigma projects by EMG, MMG, KGM, Pavlodar Refinery, Atyrau Refinery, PKOP, and Caspi Bitum.

Atyrau Refinery's project to optimise consumption of chemically treated water at the EDD-AVDU-3 unit, run by Medet Zinulliev, won the top prize as the Best Lean Six Sigma Project among KMG's Subsidiaries and Associates.

Siemens memorandum

As part of an official visit of Kazakhstan's President Kassym-Jomart Tokayev to Germany, KMG signed a memorandum of understanding with Siemens AG.

The document aims to foster collaboration in the areas of automation, digitalisation, optimisation, recording and control of production processes. Under the memorandum, the parties will be teaming up in training and upskilling personnel, creating digital models and digital twins

to model operational processes, handling data collection and processing tasks, and rolling out best in class technologies at KMG's production assets.

As part of cooperation with Siemens, work is underway to deploy COMOS software at the Akshabulak field of KGM.

Cyber security

In cybersecurity, KMG aims to protect information from external and internal threats, prevent potential losses and minimise damage from cyberattacks and unauthorised actions to ensure undisrupted full-fledged operations of KMG and its subsidiaries and associates.

Ensuring information security is an ongoing process that combines legal, organisational and technical measures of protection. Important components here are regular analysis, audits, and penetration tests, as large-scale information systems are most often used in geographically distributed infrastructure environments of large oil and gas production sites with continuous process cycles. Unauthorised access to KMG's protected networks and systems may have a devastating impact on infrastructure and consumers as well as the country as a whole.

To ensure its information security, KMG strictly complies with Kazakhstan's respective laws and adheres to international approaches and ISO/IEC 27001 standard on information security management systems.

Information security includes organisational and technical measures to protect IT infrastructure of KMG's information systems, critical ICT components and automated process management systems.

On an ongoing basis, the Company assesses information security risks to identify and prevent respective threats.

Information security is a special focus for KMG's management.

Strong information security management as a rule contributes to the Company's ongoing development by protecting it from threats, ensuring legal compliance, securing its reputation and fostering the uptake of innovations. Integrating information security aspects into the business strategy is now a major part of corporate governance efforts.