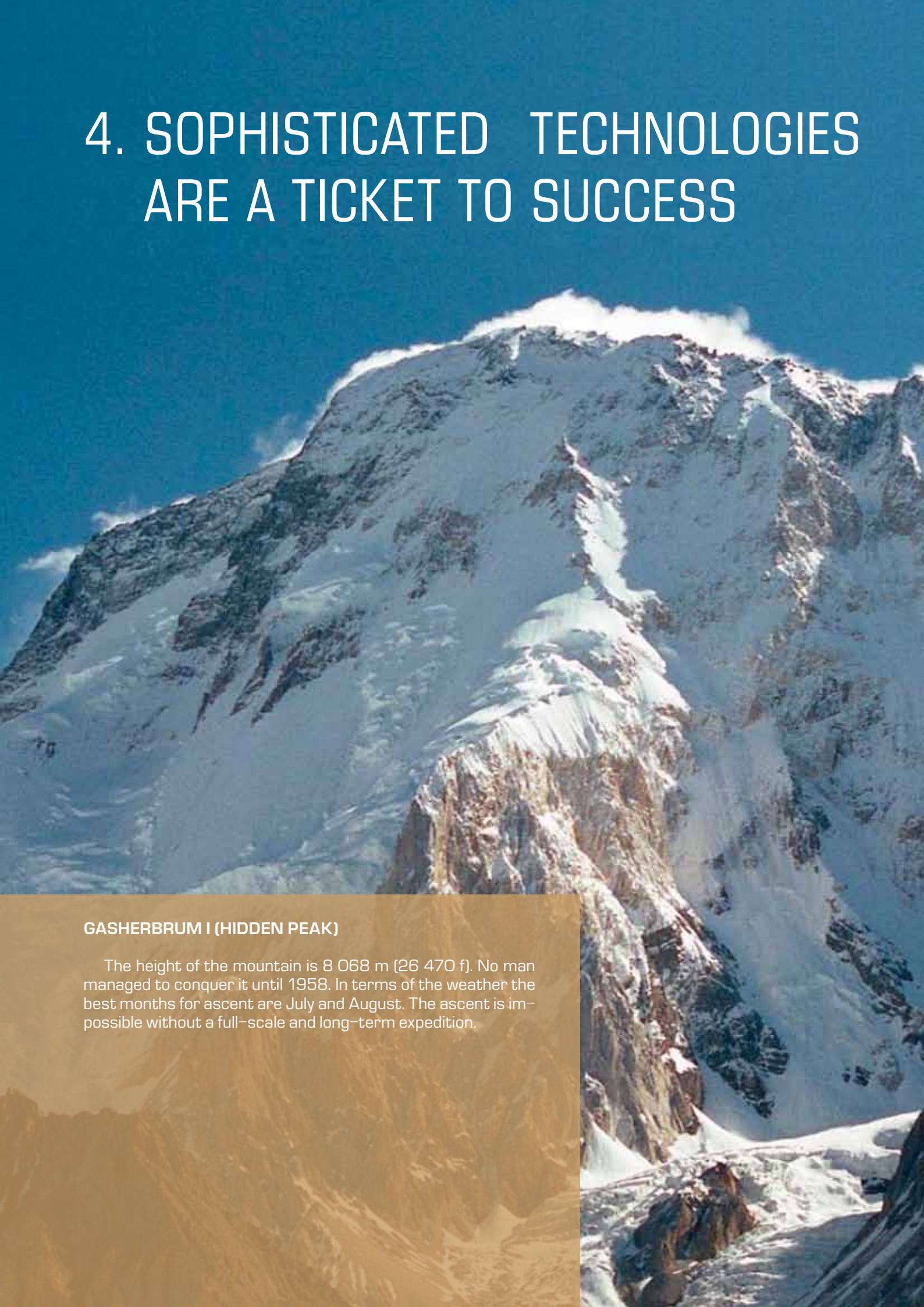
4. SOPHISTICATED TECHNOLOGIES ARE A TICKET TO SUCCESS



GASHERBRUM I (HIDDEN PEAK)

The height of the mountain is 8 068 m (26 470 f). No man managed to conquer it until 1958. In terms of the weather the best months for ascent are July and August. The ascent is impossible without a full–scale and long–term expedition.

A need for the development of IT and telecommunications in IDGC of Urals is driven by an increase in quality and reliability of energy supply for end users, retention of tariff sources for investments into grid upgrade and evolution, increase of investment efficiency, loss decrease, growing efficiency of operating expenses, capitalization growth and improved customer and investor relations.

Implementation of IT projects from problem statement to integration, support and perfection of processes help lay the groundwork for successful development of key business directions by providing a higher level of reliability, controllability and safety of IT infrastructure and business applications. In 2013 IT administration was arranged according to the Company's strategy in IT, automation and telecommunications till 2016.

1. Telecommunications.

A telecom system of the Company is a transportation medium ensuring administration of all business processes. It is based on primary communication network consolidating all facilities of the Company. The network is a base for secondary networks providing dispatcher and corporate telecom services, video- and audio conferencing, transmission of data from process management and business systems, access to Internet, e-mail, internal corporate web-pages, etc.

The Company's telecom systems are exploited and developed by IT and dispatcher departments. Telecom network is developed according to the Company's strategy in IT, automation and telecommunications approved by the Board of Directors. The following aspects are provided at that: high quality of service, ability to satisfy needs for reliable and timely submission of full, authentic and confidential information for its further usage; sustainability, constant standby, mobility, integrity, efficient response, possibility of stage-by-stage network expansion and its commissioning without abnormal performance of the existing subnetworks as well as possibility of further upgrade and expansion of capacity. Besides, there is also a provision of NE scalability using typical technical solutions, high efficiency of resource use, multifold data transmission and prioritization, usage of standard interface and protocols, usability, remote monitoring and equipment control, etc.

During 2013 Sverdlovenergo specialists upgraded an automated telephone system in one of the production units, upgraded power supply of a telecom node and installed a DGS and telecom channels for 4 110-kV substations. Chelyabenergo specialists upgraded telecom channels for 12 110-kV substations, installed PDH (E3) optical modems on fiber optic lines in a range of production units. Permenergo specialists installed SDH STM-16 main multiplexers on fiber optic lines in 5 nodes as well as upgraded ATS in one of the production units.

2. Automated technical management systems.

The creation of network management centers began in 2005. Performance of all operating functions by the NMCs increases the quality of technical management of Perm, Sverdlovsk and Chelyabinsk

grids, ensures optimal repair modes, decreased losses, rapid liquidation of network incidents, monitoring of equipment operating mode. All NMCs are equipped with automation devices ensuring successful execution of functions (ATMS, simulators, automated system for exchange of requests for changes in operating equipment status, network mode software packages).

ATMS is developed according to the Company's strategy in IT, automation and telecommunications approved by the Board of Directors. In terms of ATMS the strategy focuses on the increased efficiency of operations of the Company's industrial and engineering complex due to maximum efficiency of personnel via automated processes for collection, processing, storage and transmission of data, decision-taking and implementation of technological management functions based on sophisticated software and hardware automation means, computers and IT.

The most important subsystems are ADMS (acquisition of information on operating status of grids, processing and submission to a dispatcher) and IATS (acquisition of telemetric information from facilities, transmission to ADMS, exchange of information with regional dispatcher divisions of SO UES and other subjects.

The strategy determines the target model of the Company's ADMS as a system with a shared information model and distributed infrastructure for branch NMCs and dispatch centers in production units. The model allows combination of advantages, specific for global data storage and processing systems, and high reliability.

In 2013 Sverdlovenergo specialists installed additional functions related to network calculations and flow supervision (NMC H&S package) as well as upgraded systems for data collection and transmission on 4 110-kV substations. Chelyabenergo specialists upgraded a NMC H&S package and IATS on 12 110-kV substations. Permenergo specialists upgraded a branch NMC H&S package and IATS on 2 35-kV substations as well as dispatcher panels in 3 dispatch centers in production units.

3. Intelligent computer network.

All branches have IS Telescope+ servers and trained key users and performed compatibility testing. We have also arranged the exchange of metering information with the settlement system. IS Telescope+ also has a function dealing with peak output calculations.

4. IT infrastructure.

A reliable IT infrastructure meeting all management and security requirements is a basis for successful exploitation and development of business applications.

During 2013 we upgraded our key data processing center (Sverdlovenergo) and arranged a shared system for back up and personal data protection (Permenergo and Chelyabenergo). Besides, we have built a shared corporate computer system (Permenergo and Chelyabenergo) and upgraded IP telephony (Permenergo).

5. Corporate and technological business applications.

Business applications are evolved according to business requirements and the Company's strategy in IT, automation and telecommunications. Among our current projects we can underline the following projects:

- implementation of an automated system for incident recording,
- automation of parallel IAS reporting in SAP ERP 2005,
- development of automated information system for open source accounting e-flow,
- automation of trip ticket processing in SAP (mechanic transport and GPS) (1st stage).

Besides, we implemented the following projects:

- arrangement of ECM central storage,
- integration of SAP applications, diagnostics, automated control systems,
- automation of capital construction,
- personal customer account,
- automation of situation center,
- automation of diagnostic process in branches and production units of the Company (2nd stage), etc.

6. IT administration.

During 2013 IT administration was arranged according to recommendations from the standards on IT services of RAO UES and FSK UES. The standards are a code to be obligatory observed by IT structures.

In 2014 IDGC of Urals and Rosseti plan to implement the following projects:

- Upgrade of a typical EMC Documentum-based automated document flow system to ensure through business processes in Rosseti business structure,
- Arrangement of ECM central storage,
- Creation of ICS,
- Production Asset Management System,
- Automation of Situation Center,
- Automation of diagnostic process (2nd stage),
- Development and implementation of automated system responsible for the automation of transmission services,
- Services for corporate systems and computer networks,
- Arrangement of personal information storage (Sverdlovenergo).