and Korean, it can also translate between Japanese and Korean without first going through English. It enables Google to scale the system to translate between a large numbers of languages.

Furthermore, Google's researchers suggest that their system achieves this breakthrough by finding a common ground whereby sentences with the same meaning are represented in similar ways regardless of a language – which they say is an example of an "interlingua". This approach, called *zero-shot translation*, still does not perform as well as the simple approach of translating via an intermediary language. Nevertheless, the field is progressing fast, and Google's results will obviously create awareness of the research community and industry.

In addition, Google Translate currently supports 103 languages and translates over 140 billion words every day. Google's users and ordinary people have no doubt that they will be able to train a single neural machine-translation system that works on 100 plus languages in the near future.

Thus, neural translation technology can have benefits for simple texts translation. It arouses the question concerning human translators' professional engagement. In spite of the problem mentioned, a good human translator understands the meaning of the source text, as well as its stylistic and lexical characteristics, and can use that knowledge to give a more accurate translation.

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EVOLUTION OF THE PRODUCTIVE STRATA STRUCTURE OF PERVOMAYSKE DEPOSIT OF KRYVBAS IN THE CONTEXT OF THE THIRD ORE BODY FORMATION

The Pervomayske deposit of low grade magnetite ores (magnetite quatzites) is being mined by Pivnichnyi Iron Ore Mining and Processing Combine. Its productive strata has three ore bodies. The first and the second bodies are extensions towards the north of the fifth

and the sixth ferruginous horizons of the Saksagan iron ore pack of Kryvbass Central iron ore region. Their layered bodies from 100 to 500m thick are divided into separate blocks by disjunctive dislocations dip steeply (70-85^{o}) to the west. The boundary between the first and the second ore bodies in the sublatitudinal direction is marked conventionally: they are divided by big blocks of non-economic magnetite-silicate quartzites of the seventh schistose horizon, taken to the productive strata of the deposit along sublatitudinal disjunctive dislocations of the Devladivskyi deep fault system.

The third ore body located 100-500m to the west from the first and the second ones, represents a chain of tectonic blocks having cross-sectional dimension from 10 to 200m and stretching from the south-west to the north-east. They are separated from the first and the fecond ore bodies by blocks of non-economic magnetite-silicate quartzites of the seventh schistose horizon and are divided by disjunctive dislocations, zones of breccias, cataclasites, mylonites and various size blocks of rocks of the seventh schistose horizon. As to the data of detailed and exploitation exploration, the thickness of the third ore body decreases with its depth. The tectonic blocks of the third ore body thin out at the hypsometric levels from -200 to -500m.

Mineral and chemical composition, structure and texture of the magnetite quartzites of the Third ore body are close to those of ores of the sixth ferruginous horizon. In this connection it can be considered as a fragment of this stratigraphic horizon [1-5].

The results of the field geological and mineralogical observations have been analyzed at the open-pit faces as well as the previous research data and detailed and exploitation exploration results of the deposit. As a result, a tectonic map of formation staging of the third ore body and connection of this process with morphology evolution of the first and the second ore bodies has been compiled. A chain of tectonic events that ended by formation of the recent geological structure of the productive strata of the total deposit has been worked out.

Event 1. Participation of stratified rock mass of banded iron and enclosing formations of Pervomayske deposit Kryvorizka Series in the tectonic events resulted in the formation of the Kryvorizkyi synclinorium.

Iron-ore and enclosing sedimentary rocks were metamorphosed

under transitional conditions from greenschist to epidote-amphibolite facie of dynamothermal metamorphism during the process of folding. The layers of ferruginous and enclosing rocks of the deposit located in the eastern limb of the Kryvorizkyi synclinorium got steep (up to 85°) western dip, their strike was submeridional.

Event 2. Origination of submeridional disjunctive dislocations in the system of long-living Kryvorizko-Kremenchutskyi deep fault. The eastern one took position along the boundary between the fifth and the sixth ferruginous horizons, subconformable with occurrence of enclosing ferruginous rock layers.

As the result, the thin sixth schistose horizon consisting of plastic rocks was cut, its separate lens shape fragments fixed nowadays as "interformational low metallic inclusions" in joint ore mass of the fifth and sixth ferruginous horizons, remained.

The fault, located to the west of the described one, took flatter position dipping to the west, intersected the sixth ferruginous, the seventh schistose, and probably, the seventh ferruginous horizons.

Event 3. Subsidence along the west submeridional fault of western block, consisting of the seventh ferruginous, the seventh schistose and a fragment of the sixth ferruginous horizon.

Vertical movements were also possible along the eastern fault. At the result of subsidence at western fault a considerable size fragment of the sixth ferruginous horizon sank and was moved to the west.

Event 4. Erosion of the upper part of the deposit up to the recent level of peneplanation.

A block of the sixth ferruginous horizon subsided along western fault was partly degraded and became a separated fragment of the seventh schistose horizon from the mother part of the sixth ferruginous horizon. On the plan the subsided block of the Third ore body looks as submeridionally elongated band that is parallel to the band of the main part of the productive strata of the deposit.

Event 5. Formation of a series of subparallel faults of the system of sublatitudinal Devladivskyi deep fault. As a result, the productive strata was broken into a series of blocks, limited in meridional direction by the boundaries of stratigraphic horizons and submeridional faults of the Kryvorizko-Kremenchutskyi deep fault system, and in latitudinal one by sublatitudinal faults of Devladivskyi deep fault system.

Event 6. Differentiated adjustments of tectonic blocks along sublatitudinal disjunctive dislocation. In the result, submeridionally located band of the Third ore body proved to be fragmented; its separate blocks became separated one from another by zones of ore, non-ore and mixed breccias, cataclasites, mylonites and by blocks of low ore magnetite-silicate quartzites of the seventh schistose horizon. The blocks of the Third ore body dislocated to the east approached the massif of the main part of the productive strata of the deposit, but became separated from them by blocks of low ore rocks of the seventh schistose horizon.

The results of the Pervomayskyi open-pit exploration carried out at the open-pit faces have confirmed accuracy of the suggested tectonic scheme. Its major ideas are used in geological, mineralogical, technological mapping of the deposit, evaluating ore preparation characteristics, developing the ore blending scheme before sending it to the concentration plant, when fulfilling forward and operating mine planning.

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