



Striking Gold: Achieving safe, secure global data access

Barrick Gold Corporation is the world's largest gold-mining company, with a current portfolio of 27 operating mines. Recently named to the Global 100, a listing of the most sustainable corporations in the world, Barrick employs more than 20,000 people and has advanced exploration and development projects dispersed across the globe.

As the world's top gold producer, the corporation is estimated to have amassed over 100 terabytes of geological data in addition to more than 100 years' worth of geochemical, geophysical and remotely sensed data inherited from acquired companies.

While Barrick had developed and implemented an effective Spatial Data Management (SDM) workflow, it was aimed mainly at technical professionals with an ArcGIS for Desktop licence. As a mining company, there was a much larger group that required access to Barrick's spatial data in order to make informed decisions. This prompted the organization to look for a complementary solution that would extend access to spatial data.

"Although we have a large group of technology users and over 500 desktop licences, there are others within the organization that do not have a licence yet require quick access to data," said Iain Allen, Senior Manager of GIS, Barrick Gold. "We felt that we'd be able to make better decisions, faster, if this group had easy access to relevant spatial information."

To expand access to a growing volume of catalogued data generated by the SDM workflow, Barrick implemented ArcGIS Online and created the Barrick Online Mapping Portal.

Enabling global data access to a century's worth of data

Leveraging the SDM, Barrick completed metadata for over 100,000 datasets, a necessary pre-cursor to adding data to their Global Data Catalog. A custom metadata editor is used to complete the metadata; the MXDs are then published to file geodatabases stored in an MXD Repository on the network. Each night, a metadata spider harvests new metadata and adds it to the Global Data Catalogue. This allows data, now available on the Barrick network rather than individual laptops, to be searched and used long after a project has been completed.

Selected datasets are then made available as Web services published to ArcGIS Online. Services can be created from virtually any existing spatial dataset – both vector and raster – including geology, geophysics, geochemistry, structure, drilling and environmental monitoring.

Through the Barrick Online Mapping Portal, Barrick data can be combined with a large collection of online basemaps. Web apps are

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Ensuring confidentiality

To ensure compliance with organizational policies, ArcGIS Online allows Barrick to store data behind the firewall while hosting the user interface in the cloud. Publishing capabilities are restricted to a small group, typically the GIS expert or spatial data manager at each site or office. These specialists create and publish specific data packages around ongoing projects and restrict data access to relevant users by creating groups in ArcGIS Online. This ensures that sensitive information always remains confidential.

“The ability to keep data private is essential due to the amount of confidential information that is shared between users,” said Iain. “Security features within ArcGIS Online allow us to ensure that only users specific to a certain mine site are able to access information.”

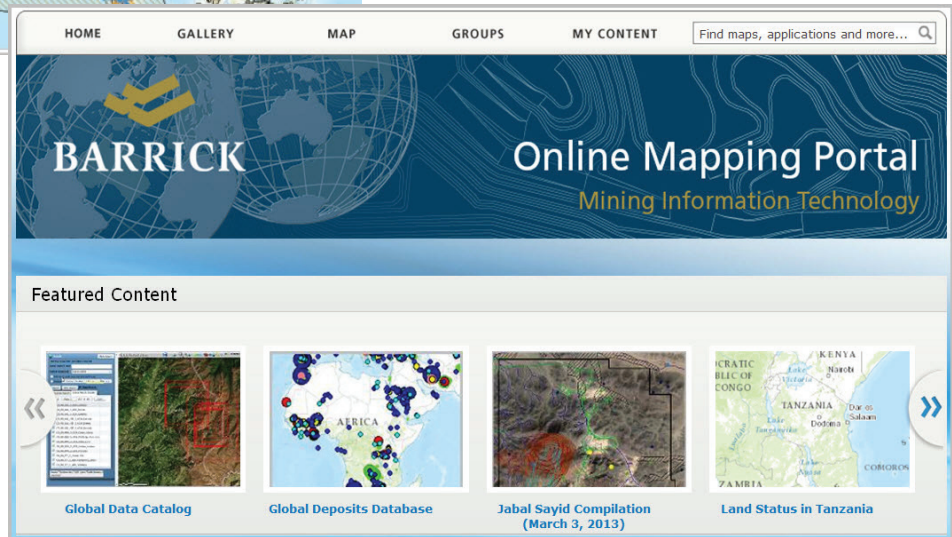
Users can get instant access to information on biodiversity and sensitive lands for mine sites across the globe.

also made available through the Portal including the Global Data Catalogue and internal Global Deposits Database, both of which were formerly standalone applications. Discipline specific data compilations allow staff to access directly the data that is most vital to their work.

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By simply opening a Web browser, senior managers can now make critical determinations such as: What is our biodiversity risk globally? How many sites do we have around the world at various stages of exploration? Key decision makers are able to interact with the data and get a better understanding of global issues.

When mine site expansions occur, relevant infrastructure data can be integrated into an interactive Web map. This may include satellite imagery, geology, protected areas, road networks and local towns. This map can be referenced to analyze changes over time and to monitor activity “outside of the fence”; as mine sites in developing countries often attract large numbers of local people, tracking the growth and distribution of this population is important in the event of an expansion.



Barrick customized their ArcGIS Online home page to reflect their brand.

In addition to creating site-specific data packages, Barrick is planning to leverage the cloud platform to create a travel security map for all of its mining sites across the globe. The map will display risk factors for each site including political instability, earthquakes, tsunamis, typhoons and other threats. The site-specific risk factors will be drawn from a spreadsheet managed by the Security team and any changes made will be automatically reflected on the map, providing users with a live feed of security-related updates.

Future plans include leveraging the Compare Maps template within ArcGIS Online which will allow users to view datasets relative to multiple mine sites on a split screen. Barrick also hopes to link their data catalogue directly with ArcGIS Online so that data can be searched in the cloud using metadata key words.

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