What Is Blockchain—and How Does It Apply to Diamonds?

The technology might help track stolen goods and improve the Kimberley Process

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In his midterm report issued this summer, Kimberley Process chair Ahmed Bin Sulayem laid out an intriguing proposal: The certification scheme's security could be enhanced with blockchain technology

So far, the chair has not added to this statement. A spokesperson for the Dubai Multi Commodities Centre told *JCK*: "We're still looking into the concept in a broad sense—with a view to understanding ourselves how it might work and how it might be applied specifically."

To increase my insight on how blockchain might work for diamonds, and the KP in particular, I turned to Leanne Kemp (pictured), founder and CEO of Everledger, a London-based company that uses blockchain technology to safeguard diamond provenance, as well as Eric Schulte, tech person and interested industry observer.

Blockchain is the technology that underpins bitcoin. It is the "ledger" that records transactions in that crypto-currency. It is designed to make transactions (or data) more secure by recording the information in not just one location, but over a network of computers, making it tougher to tamper with. (For more on this, *The Economist* has a good explainer.)

This technology sometimes provides the backbone for ledgers that gather information from previously "siloed" databases. So if two organizations have information both might find valuable, the blockchain technology helps their databases communicate with each other and keep joint records via a decentralized ledger.

In the case of the Kimberley Process, blockchain could underpin a possible database linking all the 81 different KP export and import authorities. Right now, each of the participant KP countries has its own method for issuing certificates and storing the resulting information. ("Some of these Kimberley Process offices have certificates in filing cabinets," says Kemp.) A blockchain-backed database could provide a secure way to issue and record certificates—preventing the counterfeiting of certificates (a periodic problem), creating a more extensive data network, and possibly even providing a clearer window into the international movement of diamonds. Eventually, the KP chair suggests, this could eliminate the need for physical KP certs.

Of course, this won't happen overnight.

"Adopting blockchain technology would be a long process requiring a great deal of research," the chair's report says, promising an update at the upcoming plenary.

Whether that ever happens, Kemp is actively talking up other applications for blockchain in the industry: Everledger's main business is a registry of stolen goods meant to act as an "insurance fraud detection system."

The system works by linking different insurance company diamond databases. This gives them a way to validate claims—so an underwriter is tipped off if, say, someone has submitted multiple claims on a stolen diamond to different insurers. The system has also been integrated with certain gem labs, so the insurers are now informed if a stolen gem has turned up at a lab. (After all, Kemp notes, when an insurance company pays out a claim for a stone, it effectively owns it.) Kemp also hopes to sign online marketplaces such as eBay—to prevent someone from making an insurance claim for a diamond and then fobbing it off online. She wants law enforcement involved as well.

All this just brings the diamond industry in line with others, she explains.

"If a car has been stolen or lost then an insurance company can find the provenance of the car," she says. "But there is no registry that exists for diamonds."

Blockchain also underpins the growing field of smart contracts, which could also have applications for the diamond business. Let's say a retailer signs a deal to buy three diamonds. With a smart contract, when the jewelers signs for those stones with the UPS delivery person, the dealer who sent them will receive an automatic payment, similar to how people pay their bills with direct deposit.

While Kemp has studied at GIA, her background is primarily technology rather than jewelry. She hopes to eventually expand her database concept to other luxury goods, including art, wine, and high-end watches.
"The blockchain," she says, "is the future of certification."