Business challenge

iPoint-systems GmbH needed technical expertise to help it quickly launch a blockchain network to validate the provenance of minerals used in manufacturing.

Transformation

iPoint tapped the IBM® Garage™ to help it quickly develop and launch a blockchain pilot on IBM Cloud™ to trace minerals from mines in conflict-affected and high-risk areas such as the Democratic Republic of the Congo or Rwanda. Blockchain technology can help keep "conflict minerals" from critical products by providing an immutable record and a digital twin of the resources as they move through the supply chain.

Results

Accelerate SustainBlock pilot launch
by using a design thinking and minimum viable product (MVP) approach

Promote improved mining conditions
by requiring participating mines to comply with regulations

Support future Circular Economy initiatives
by providing traceability through product life cycles

iPoint-systems GmbH

How blockchain helps stop the flow of conflict minerals

Founded in 2001, iPoint is a software and services provider focused on product and process compliance and sustainability. The company offers specialized software for managing, tracking and reporting data across the supply chain, from product concept, to use, to recycling and reuse. From its headquarters in Reutlingen, Germany, iPoint oversees 170 employees in 14 locations across North America, Europe, Asia and Australia. The company's more than 50,000 customers from 100 countries include 250 of the world's top manufacturers.

"We try to improve the working conditions of small and medium-sized mining operations in these conflict-affected and high-risk areas."

—Sebastian Galindo Schaly, Project Lead, SustainBlock project, iPoint-systems GmbH

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Tracing conflict minerals in the supply chain

Almost everyone is familiar with the terms "blood diamonds" and "conflict minerals." They connote natural resources that can help finance various wars and conflicts in the regions where they are mined. Conflict resources go well beyond diamonds, increasingly including minerals used in mobile phones, electric car batteries and other high-tech items. And the "conflict" today includes not just war financing, but also child labor, forced labor, modern slavery and poor environmental practices.

The EU and the US have both expanded regulations that require companies purchasing minerals from conflict-affected and high-risk areas to ensure the sustainable, conflict-free sourcing of these resources. These include the US Dodd-Frank Act, which requires publicly-listed companies to disclose to the Securities and Exchange Commission whether minerals that are necessary to the functionality or production of a product they manufacture originated in the Democratic Republic of the Congo. A similar EU regulation (2017/821) that governs importers of tin, tantalum, tungsten and gold—also known as 3TG—will take effect in 2021.

In addition to government oversight, increased public awareness means that consumers want to know that the products they use, and the companies they buy from, don't contribute to conflict and human rights abuses.

"There are many technology and automotive brands that are very interested in ensuring that their products are free of child labor, slavery and do not contribute to conflicts," says Sebastian Galindo Schaly, Project Lead of the iPoint SustainBlock project. "We want to support these companies with our solutions." iPoint, which already offers its SustainHub solution to help clients manage other compliance and sustainability challenges, decided to create a solution that could trace 3TG resources from mine to store.

iPoint set out to design a blockchain-based solution to verify whether mines and mineral sources operate sustainably and responsibly, allowing upstream purchasers to confirm compliance with US and EU regulations. Even small to medium-sized mines in countries such as Rwanda and Congo must prove that they are conducting business responsibly. This platform would give the mines an incentive to comply with the sustainability and conflict-free mining requirements, which will ultimately improve mining conditions.

When setting out to develop this traceability platform, iPoint realized that it needed greater expertise in blockchain technology than it currently possessed to ensure that the solution was operational in time

"The Garage approach is something that we can reuse. It saves time and resources. And, eventually, these savings will be projected as cost savings."

—Marjan Stanković, Software Architect and Lead Developer for SustainBlock, iPoint-systems GmbH

to meet the commencement of the EU 3TG regulation. Rather than continue to struggle to create a solution from scratch, iPoint turned to the blockchain experts at the IBM Garage.

An ideal blockchain scenario

Aware of IBM leadership in blockchain technology, iPoint decided to meet with consultants from the IBM Garage for Blockchain. According to Marjan Stanković, Software Architect and Lead Developer for SustainBlock at iPoint, "The first thing we noticed was that the business people from IBM were very capable of talking about Hyperledger and blockchain technology."

The IBM Garage consultants quickly let iPoint know that it had an excellent blockchain use case. They offered an Enterprise Design Thinking approach leading to an MVP as the fastest way

for iPoint to launch an actual blockchain pilot. "We didn't want to waste our time working with different providers," says Stanković. "With IBM, we were able to talk about our real issues. In short, we were very happy, even impressed, with IBM Garage."

The iPoint and IBM teams each brought expertise to the table: IBM with a deep knowledge of blockchain for supply chain and Hyperledger Fabric, and iPoint with its experience in data collection processes, sustainability and accountability in the responsible minerals supply chain. It was an unusual scenario for the Garage team because iPoint came with specific requirements for a well-developed and suitable blockchain project rather than starting out with a blank whiteboard.

SustainBlock— blockchain for the future

Within four weeks of engaging with the IBM Garage team, iPoint had its MVP, built on IBM Cloud. It was time to test the blockchain.

With support from the European Partnership for Responsible Minerals (EPRM) and BetterChain, iPoint launched a pilot of SustainBlock. The blockchain technology allows iPoint to create a "digital twin" of the resources that can be followed from mine to smelter to manufacturer as the actual minerals make their way through the supply chain.

The speed at which iPoint was able to launch its pilot played a critical role in the success of the project. When it first came to the IBM Garage, iPoint had already developed its software requirements and wanted to get to an MVP quickly, but was a bit skeptical about the design thinking approach. "Initially we had some doubt and thought that the design thinking phase would take too much time," says Galindo. "In the end, it was just the right amount of time."

Stanković concurs: "For me, as a technical person, it was definitely a benefit that we didn't waste time struggling with trial-and-error approaches that would have been likely without the expertise from the IBM team." After his first time using a design thinking approach with the IBM Garage, Stanković was sold. "The Garage approach is something that we can reuse internally at iPoint," he says. "It saves time and resources. And, eventually, these savings will be projected as cost savings."

The pilot focused on two tungsten mining sites in the African Great Lakes Region, where mining and working conditions can be harsh. Original equipment manufacturers (OEMs) not only gain insight into their

"I don't think there's ever been an HR chatbot like CARL, and it wouldn't exist without the agile, design thinking approach that IBM provided."

—Sabine Rinser-Willuhn, Manager, HR Systems, Siemens AG

supply chains to responsibly source minerals, but are also poised to better manage compliance with existing and future regulations.

Galindo notes that, in addition to providing manufacturers with traceability for the minerals they source from small to medium-sized mining operations, "We really try to improve the working conditions of small and medium-sized mining operations in these conflict-affected and high-risk areas." To participate in the network, companies need to prove that they are following responsible business practices. Then, once a mining company becomes part of a blockchain-based consortium and establishes an ongoing customer stream, it can continuously improve its mining techniques and conditions.

In April 2019, iPoint Chief Executive Officer (CEO) Joerg Walden was elected co-chair of the Social Impact working group of the International Association of Trusted Blockchain Applications (INATBA). The group believes that blockchain offers a unique set of tools to tackle some of the most pressing issues humanity is facing today and aims to use the technology to help resolve issues of modern slavery, poverty and corruption, among others.

iPoint sees great possibilities for using blockchain technology now and in the future. It intends to incorporate the technology into upcoming endeavors to help companies participate in the emerging Circular Economy. The EU has established a Circular Economy Framework that aims to significantly reduce waste by continuously recycling and reusing the raw materials from products. "We want to develop a digital twin which carries information through the design, manufacturing, use and recycle phases, and then we want to get these materials and reintroduce them into a new cycle," says Gunther Walden, Founder of CircularTree, an innovation hub for iPoint.

Solution components

- IBM® Blockchain
- IBM Cloud™
- IBM Garage™

Take the next step

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