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UN LOCK
TRAPPED VALUE WITH BLOCKCHAIN

Transformative power for business operations

There's good news for companies seeking ways to use digital technologies to improve their value chains. Blockchain is emerging as a powerful tool for dramatically restructuring how companies work together and, in the process, unlocking trapped value that's currently tied up in repetitive, time-consuming processes. And, when coupled with technologies such as robotic process automation, IOT and artificial intelligence, blockchain can deliver even greater benefits.

Every company keeps its own record of important information on a ledger. Today, when companies exchange information with others in a value chain (which may include suppliers, logistics providers, certification providers, service providers and buyers), complex, time-consuming processes are needed to reconcile that exchange. Such processes are the source of considerable inefficiency in interactions among value chain partners, and they trap a significant amount of value.

But help is here in the form of blockchain. Blockchain is a distributed, decentralized digital network that enables the exchange of value or the ability to confidently share data—including financial assets and contracts—in a secure environment.

> **Blockchain technology fundamentally changes how data is managed, so companies can move from a scenario where every organization maintains its own copy of a data set to one where all parties have controlled access to a shared copy.**

By design, blockchain builds trust into every transaction via attributes not available in standard database models—thus boosting security, increasing cost efficiency, and optimizing reconciliation processes (Figure 1). With blockchain, traditional independent players can now work together to streamline and integrate processes, all with controlled access to sensitive data, rather than relying on redundant, siloed systems.

Figure 1: Blockchain overcomes the limitations of traditional database models, optimizing reconciliation processes.

TRADITIONAL DATABASES   **SHARED DATABASES**
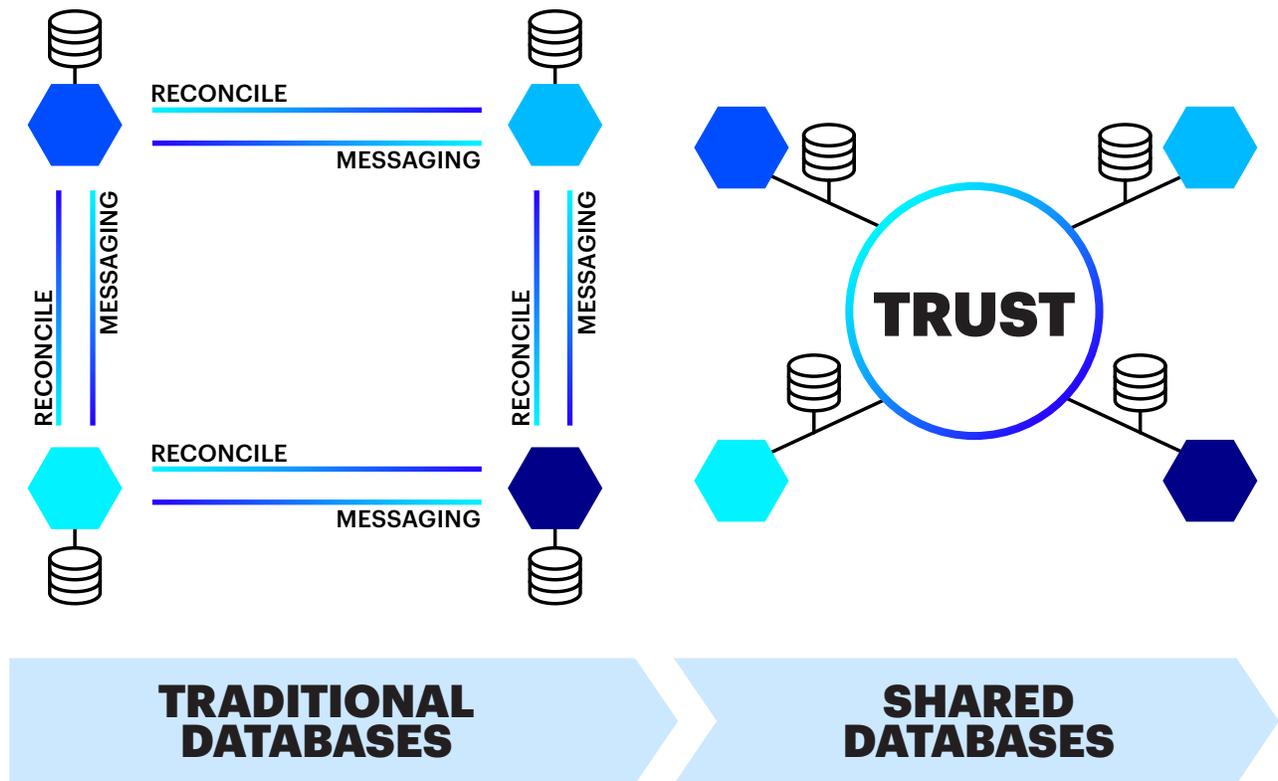
Blockchain technology can unlock trapped value by transforming business operations in three significant ways:

1. Reinventing processes

No longer held to decade-old constraints in traditional data silos and duplicative processes, blockchain will enable an overhaul of the capabilities that support how companies interact with and act on shared data.

2. Improving productivity and quality

By working from a mutualized data source via blockchain, companies can trust the data—thus eliminating one-off data updates, exceptions, and reconciliations.

3. Increasing transparency among parties

By connecting data across the value chain, blockchain will provide transparency and real-time sharing, thus boosting trust and minimizing risk.

BLOCKCHAIN'S IMPACT ON SPECIFIC BUSINESS OPERATIONS AND THE BROADER VALUE CHAIN

One of blockchain's biggest advantages is that it goes beyond simply automating old processes with new technologies.

Instead, blockchain offers the chance to truly rewrite the way companies operate by delivering new levels of data transparency and truthfulness, removing redundant processes, and revamping or replacing inefficient capabilities. In doing so, blockchain can facilitate a restructuring of traditional value chains by eliminating steps and activities that currently are a part of doing business with each other.

But the benefits don't stop there. Companies can combine blockchain with cutting-edge technologies such as robotic process automation, analytics, machine learning, cognitive capabilities, and applied intelligence to unlock even more value. For example, they can automate repetitive, transactional tasks, as well as supplement judgment-heavy activity by helping human workers with complex decision making and creative problem solving.

Blockchain also can facilitate a restructuring of traditional value chains by eliminating steps and activities. To date, companies have become more efficient by streamlining the repetitive processes within the four walls of the company. But process and data siloes have limited companies' ability to see value outside their own organization. With blockchain effectively eliminating those obstacles, applied intelligence is free to expand and flourish across the entire value chain, further transforming business operations and communication among multiple companies.

> **Applied intelligence working in concert with blockchain may create unprecedented opportunities for companies to reduce the effort and complexity of doing business together, unlocking trapped value for everyone.**

Let's take a look at how blockchain's impacts could play out in three key operational areas: finance and accounting, supply chain, and sourcing and category management.

Finance and accounting: improved efficiency and working capital

Many finance and accounting processes are time-consuming and inefficient. For example, in the case of an invoice dispute, companies have to correspond with each other multiple times to cross-check the invoice received against their copy of the original transaction to address invoice discrepancies. Each party trusts its own data and keeps its own records, and relies on algorithms and people to determine the next steps when those records don't match.

With blockchain, both parties have mutualized data and smart-contract-based remedial steps, which prevent many discrepancies from happening upfront.

Supply chain: greater transparency

Blockchain provides transparency into the processes it helps enable, and companies can use this transparency to improve key areas of the supply chain. These may include reducing fraud through product "track and trace," understanding warranty obligations for products with parts from multiple manufacturers, accelerating and enhancing financial and accounting procedures, and quickly identifying the source of product defects for recalls through warranty repairs.

Imagine, for example, creating a service history record on a blockchain for each piece of manufacturing equipment—one that shows how often the equipment was worked on, who did the work, what work was performed, and when. By ensuring the integrity of data that's continuously updated and accessible by all involved parties, blockchain can provide a holistic view of the equipment's maintenance to identify crucial gaps or areas needing service.

> **Blockchain provides transparency into the processes it helps enable to improve key areas of the supply chain.**

Sourcing and category management: less vendor risk

Screening new vendors to identify potential risks in doing business with them is a critical step in developing contracts. But it also can be time consuming and often incomplete. Companies have to scour various disparate sources for information and trust that what they find is accurate. Inaccurate information could expose a company to doing business with a problematic vendor—for instance, one that may have been cited for non-compliance with relevant regulations or for employing an at-risk workforce.

Blockchain could be the mutualized data source for vendor profiles. Creating attestations on a blockchain could provide a wealth of information on a vendor's history. A service that could release such information to both buyer and seller upon agreement would greatly improve the quality of the data available and the speed with which it could be provided—thus, limiting the buyer's risk.
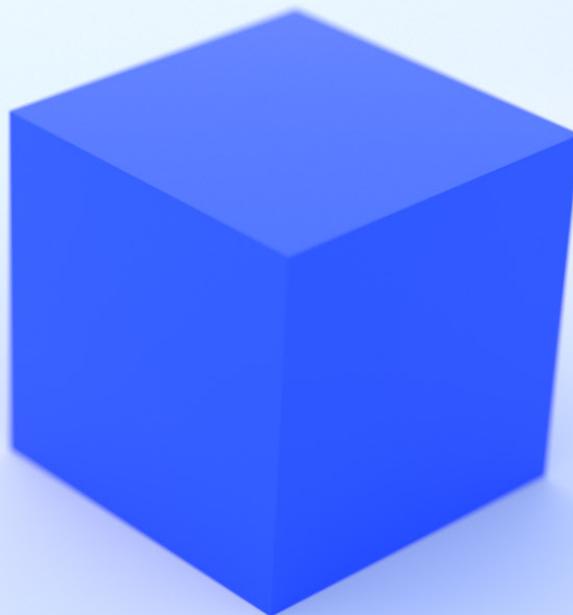
A BLOCKCHAIN PROCUREMENT PROTOTYPE FOR OIL AND GAS

As the preceding examples show, blockchain can have a major impact on an individual company's operations as well as how companies do business with each other. But it also has the potential to transform entire industries—especially those that still struggle with processes that have yet to benefit from digital technologies.

Consider a blockchain platform prototype Accenture has developed for the oil and gas industry. It's designed to dramatically improve how oil companies purchase maintenance, services and materials for their well sites—a process that's still largely manual, time-consuming, and inefficient. Currently, when an oil field supervisor has to buy something for his site, he typically makes his request either by phone or by a written purchase order that's mailed to the oil company's central procurement department, which then places the order with a vendor.

The Accenture prototype digitizes the entire process via a mobile app for field personnel, a web portal for back-office workers, and blockchain-enabled shared data that all parties involved can access. Here's how it works (Figure 2): Let's say a field supervisor who's in charge of a number of wells discovers a metal repair is needed. He has to find a welder quickly to make the repair so activity can continue.

Figure 2: A blockchain-enabled solution for oil field procurement
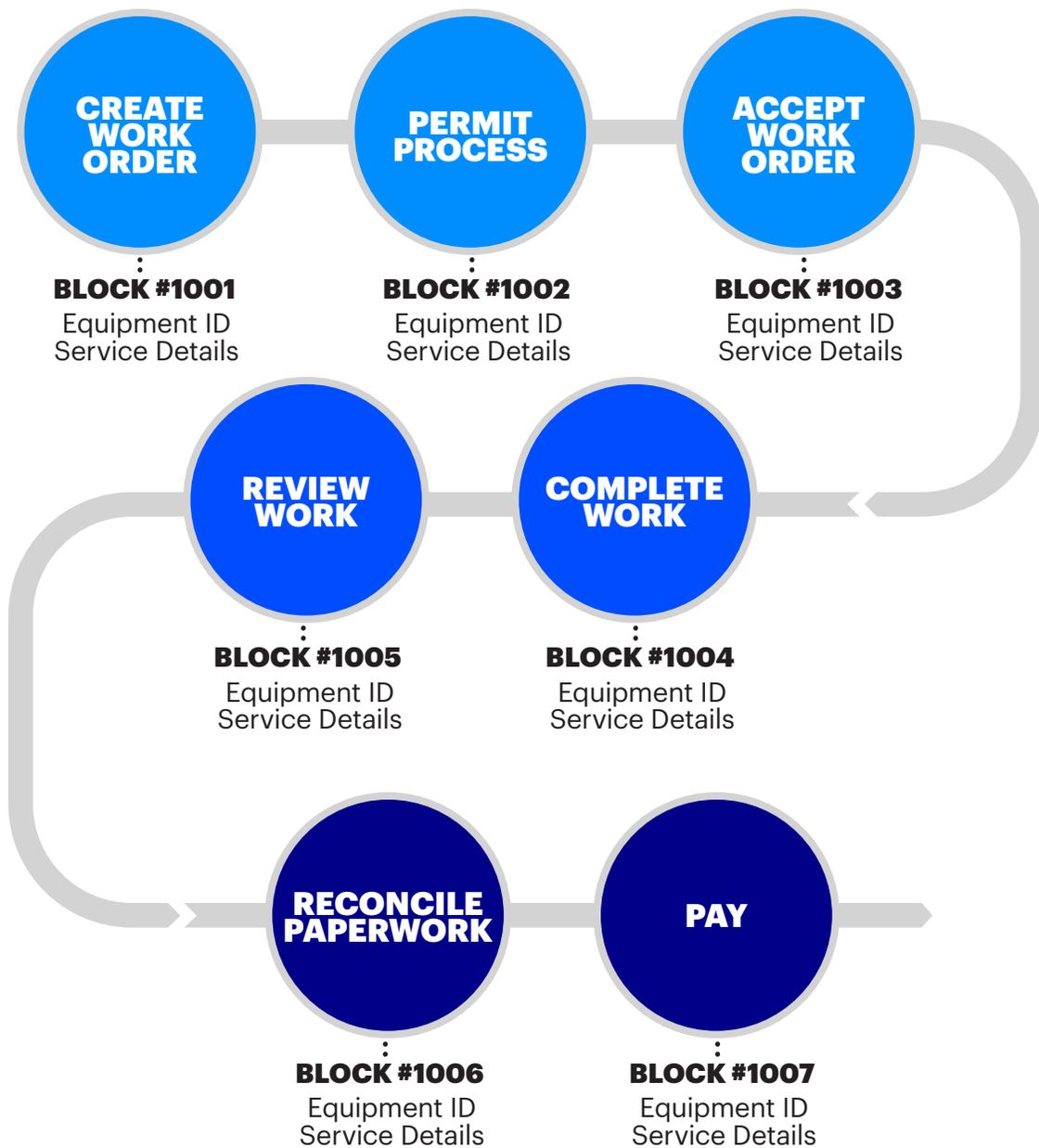
MOBILE APP
HELPS THE FIELD
SUPERVISOR

WEB APP
HELPS THE VENDOR
AND THE OIL FIELD'S
BACK OFFICE

SERVICES TIER
HELPS VENDORS
INTEGRATE

BLOCKCHAIN
GIVES EACH
EQUIPMENT A SERVICE
HISTORY RECORD

CREATE WORK ORDER

BLOCK #1001
Equipment ID
Service Details

PERMIT PROCESS

BLOCK #1002
Equipment ID
Service Details

ACCEPT WORK ORDER

BLOCK #1003
Equipment ID
Service Details

REVIEW WORK

BLOCK #1005
Equipment ID
Service Details

COMPLETE WORK

BLOCK #1004
Equipment ID
Service Details

RECONCILE PAPERWORK

BLOCK #1006
Equipment ID
Service Details

PAY

BLOCK #1007
Equipment ID
Service Details

Using the mobile app, the supervisor indicates what he needs. The app curates and presents a pre-approved list of welders in the field who could fulfill the request. The supervisor selects the welder, enters the details of the work to be completed, and presses "order" to execute. The order is transmitted to the vendor and the oil company's procurement department, both of which can access the details via the web portal. The vendor dispatches the welder, who completes the work and indicates the work is ready to be reviewed by the supervisor. The supervisor reviews and accepts the work and, via the web portal, the oil company initiates payment to the vendor.

Because the process is underpinned by blockchain, everyone involved can work from the same secure record of data without the possibility of a single point of failure. This eliminates data siloes across companies, and the accompanying need for tedious reconciliations when information between companies doesn't match up. It also gives each piece of equipment a service history record so everyone involved can see at any time how the equipment has been maintained and to spot and address any potential trouble areas before they become bigger problems.

Widespread adoption of such a platform by the industry could help oil and gas players address arguably their biggest challenge today: reducing their cost structure to remain competitive in an era of low oil prices.

> **Blockchain can transform entire industries, especially those with processes that have yet to benefit from digital technologies.**

MOVING FORWARD: BEGIN PLANNING FOR BLOCKCHAIN NOW

Today's advancements in digital technologies allow virtually everything and everyone to connect. For companies, this means looking beyond internal operational efficiencies to unlock greater value. Blockchain can be a powerful tool for doing so.

That's why companies should begin mobilizing now to determine how to use this transformative technology to tap value trapped in key operational processes. A good first step is to evaluate processes using a formal framework to determine potential blockchain use cases, impacts, and benefits. Such a framework can help companies carefully think through how they'll approach blockchain, what they want to accomplish and, importantly, whom they choose to collaborate with.

Blockchain technology, while nascent, is real and its potential benefits are significant. It should be an important part of every company's agenda, regardless of its industry or where it sits in the value chain.

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