risk
/risk/
£200 million
2) fraud
3) cyber
$50 billion
everledger
digital
global
ledger
London

Barclays Accelerator

POWERED BY techstars
ENFORCED ON THE BLOCKCHAIN

Ownership + Custody

Recovery
Sales
Loans

Storage
Payments
Delivery

smart contracts platform
+ 20,000 calls
$2mio suspected
123,000 analysed
GRANTING PERMISSION & FORGIVENESS SINCE 1888
15.2 Rough diamonds
Exploration & Production
<table>
<thead>
<tr>
<th>Diamond Banks</th>
<th>Rough diamonds</th>
<th>Cutting &amp; Polishing/ Manufacturing</th>
<th>Retail Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate Financing</td>
<td>✔</td>
<td>❇</td>
<td>✔</td>
</tr>
<tr>
<td>Equity Financing</td>
<td>✔</td>
<td>❇</td>
<td>✔</td>
</tr>
</tbody>
</table>

Source: The Global Diamond Report 2014; Bain & Company
fraud
synthetics
conflict stones
double financing
REPORT UNAVAILABLE

The report you requested has been invalided. The report and this diamond must be returned to GIA for further review. The report will not be available in Report Check until the diamond is re-examined.

120537249
Go
The new HRD Antwerp Laser Removal Service

30 November 2015 • News

The HRD Antwerp Diamonds made operational a new Laser Removal Service (RI) to remove an old serial number or custom inscription. For this it is simply needed to submit the diamond for certification and ask for the laser inscription to be removed and order a potential new inscription. All this is done in-house at the HRD Antwerp lab by polishing experts. The non-destructive (RI) does not alter the carat, clarity, colour or cut of your diamond at any point.

Alex Shishlo, Editor in Chief of the European Bureau, Rough&Polished
grading/re-submission/
cut
/& repolish/
synthetics

/HPHT & CVD/
controlled environment
connected devices
applied technology
Blockchain is Riding a Wave But A Scalable Blockchain Database is Needed

Thousands of enterprises are playing with the tech.

- Enterprises can start proof-of-concepts knowing that scalability is solved
- Developers can start experimenting
- Open, permissionless innovation for the entire community is possible on our public BigchainDB
1 Billion
11,500 tx/s
2 tx/s
5,000x
Blockchain technology

Scalability is a serious problem; current blockchains are several orders of magnitude away from the amount of processing power needed to run mainstream systems.

"Vitalik Buterin, Founder of Ethereum"
Roadblocks to Enterprise Adoption

Blockchains cannot be used in enterprise applications, in part because of low scalability, high latency, and low capacity

- **Throughput**: 2 transactions per second isn’t enough
- **Latency**: 10 minutes is too slow
- **Capacity**: 50GB is laughable for a database
- **Scalability**: Performance decreases as nodes are added
- **Query**: Database is not query able

Blockchains cannot be used in enterprise applications, in part because of low scalability, high latency, and low capacity.
A scalable blockchain database with – high throughput, low latency, high capacity, powerful query capabilities and rich permissioning to enable enterprise blockchains

Throughput
>1,000,000 writes/s

Latency
Less than 100 ms

Capacity
Petabytes with each node adding 48TB

Scalability
Performance increases as nodes are added

Query
Database is fully query able
The world’s most scalable blockchain database

www.BigchainDB.com

@BigchainDB
<table>
<thead>
<tr>
<th>Feature</th>
<th>Bitcoin</th>
<th>Big Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immutability</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>No Central Authority</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Assets Over Network</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>High Throughput</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Low Latency</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>High Capacity</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Rich Permissioning</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Query Capabilities</td>
<td>✔️</td>
<td>✔️</td>
</tr>
</tbody>
</table>
The Decentralized Blockchain Stack

Processing

File System Database
The Decentralized Blockchain Stack
The Decentralized Blockchain Stack

- Applications
- Platform
- Processing
- File System
- Database
The Decentralized Blockchain Stack

Applications

Platform

Processing

File System

Database
The Decentralized Blockchain Stack

Applications

Platform

- Business Logic
- Highly scalable

Processing

File System

Database

The Decentralized Blockchain Stack
The Decentralized Blockchain Stack

- Applications
  - Platform
    - Business Logic
    - Highly scalable
  - Processing
  - File System
    - Large files / media
  - Database
There’s a **Missing** Gap in the Decentralized Blockchain Stack

**Applications**

**Platform**
- **BlockApps**
- **Enigma**

**Processing**
- Business Logic
- Highly scalable

**File System**
- **IPFS**
- Large files / media

**Database**
hello tomorrow 😊
Today

- Multiple versions of trust to a Single Source of Truth
- Intransparency across systems to complete transparency
- Batch processing to 24/7 real-time processing
- Multiple system vulnerabilities to a hack resistance

Tomorrow

- hello tomorrow 😊
2016 & beyond
These are the characteristics/enablers:

- Notarization & Time-stamping
- Ownership & Title transfer
- Chain of Possession
- Systems of Warranties (Ethical Trade)
Catalyst of Possibilities

**Efficiency**
- Determine exposure in real-time and position on FX trades
- Streamline Back Office functions
- Faster Reconciliations

**Supply Chain**
- Prevent fraud via transparency, certificates
- Detect fraud and leakage using analytics
- See bottlenecks and delays in real-time

**Exchanges**
- Reduce risk and cost of escrow
- Reduce time to transmit funds
- Provide audit trail and receipts
HIGH INVESTMENT POTENTIAL

Source: The Global Diamond Report 2014; Bain & Company
'Blood diamonds' dug from African mines by children as young as 11, gold taken from 25m underwater by kids aged 9: The slave labour scandal behind the jewellery hanging around your neck

- Children as young as 11 are working alongside adults in the 'blood diamond' trade in the Central African Republic
- The chain of supply crosses so many country borders that most people don't know where their diamonds originated
- Thousands of children as young as nine work in 'absolutely terrifying' conditions in gold mines in the Philippines
- Hard-hitting reports into the diamond and gold trade released by Amnesty International and Human Rights Watch

By IMOGEN CALDERWOOD FOR MAILONLINE

PUBLISHED: 16:41 GMT, 1 October 2015 | UPDATED: 08:03 GMT, 2 October 2015
Example supply chain from mine to market for a diamond from the Central African Republic prior to its suspension from the Kimberley Process

1. In 2012, CAR exported 365,916 carats of rough diamonds with a value of US$62.1 million under the Kimberley Process.
2. Antwerp and Dubai are the world’s biggest diamond trading and sorting centres. Diamonds will be traded and sorted five or six times before they are cut and polished.
3. Over 60% of the world’s diamonds are cut and polished in India. India is also a key manufacturing centre.
4. China is the world’s largest diamond jewellery producer. China is also a major cutting and polishing centre.
5. The US, China, India and Europe are the world’s largest diamond jewellery markets.
Ethical Sourcing

Luxury Goods (Combat Counterfeiting)

Jewellery & Fine Art

Diamonds
Building the digital vault & ethical trade platform of the future

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