BlueBarricade Enterprise Digital Process (BEDP)

BlueBarricade

Secure, Transparent & Traceable
BlueBarricade whitepaper on digitalization of processes

Automation is today key for any business. This includes the evolution to digitalize any process, be they internal, external or a mix of both.

The challenges are many, especially as most often it includes the need to integrate old technology with new - all in a seamless way and with limited resources.

This is where BlueBarricade excels. By providing a unique, scalable solution that is developed from start with Security, Transparency, Traceability and Speed at its core. We provide the latest technology in combination with the trust and stability of our embedded partner IBM for your core business applications and processes.

Executive summary

BlueBarricade enables a true enterprise-grade blockchain based application and service, making it possible for any enterprise to fully utilise the benefits of blockchain in existing processes while also drastically reducing complexity and overall operational cost. Solving the ubiquitous challenges of security, transparency and traceability is necessary as automation and integration are needed to excel in today's highly competitive business world.

We do this by introducing BlueBarricade Enterprise Digital Process (BEDP) – a complete solution that enables your enterprise to digitize your business process easily with scalable, proven security and an unparalleled speed of blockchain transactions.

Setup	Process	Visualize

IBM Embedded partner

BlueBarricade is an Embedded Solutions Partner to IBM globally. Working in close partnership with IBM Labs, Sales and Integration assures long term customer commitments and quality. As an Embedded Partner for our applications, it further assures quality, testing and approval for all our applications.

Companies have been building private and shielded IT systems for decades on which most of today's applications and processes are executed. This has worked fine as most enterprises have had its core products and services procured internally. In the new world, in which most services are a mix of internal and external data combined to deliver a unified service to the end-user, the old legacy architectures quickly become a huge challenge.

The challenges are many, but include:

- Security
  - Legacy systems are all built to keep people out, new systems are all about collaboration and integration
- Transparency or trust
  - Any business process that in one way or another includes an external 3rd party need to handle trust. Huge investments are made in legal contracts and the cumbersome processes to follow up any business transaction.
  - 3rd party audits required by law or as an internal mandatory requirement is also challenging the digitalization of business processes
- Traceability
  - As a direct result of both security and transparency the need for fast and non-tampered traceability is a must. All parties involved or depending on the actual transaction need traceability and in certain sectors, like bank, finance and medicine, this is required by law.
- Speed of business
  - Today speed of business is key competitive advantage. As such all of the above needs to be provided at the highest possible speed for all parties and users involved. A slow process or supporting applications will have direct negative business impact.

## Challenging the spaghetti on-prem cloud architecture.

Today's highly integrated architectures have evolved over a long period of time. As we are now challenged to provide more security, transparency and trust at every single point, this diagram needs to be revised. Each component needs to be inspected, potentially upgraded, tested and redeployed. As the entire process is depending on these interlocking parts, a small change or update can break it all. This is a never ending and often very expensive IT infrastructure to support and maintain over time.
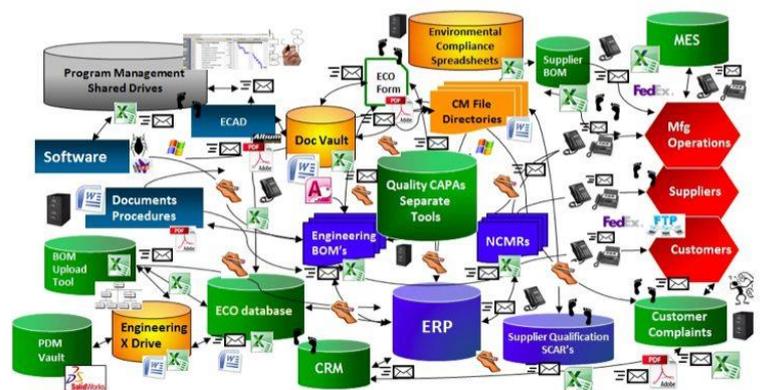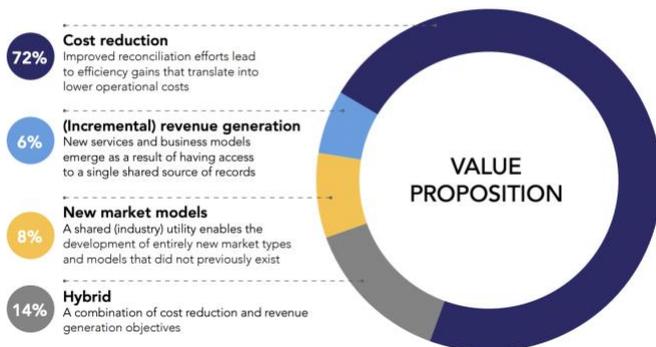
Blockchain for Enterprise – why?

Blockchain technology has been used for more than a decade, but with limited enterprise use cases. The most commonly known use of blockchain today is Bitcoin. In recent years Bitcoin has evolved from something perceived as dodgy, to being fully supported by reputable companies like Tesla, Morgan Stanley and many more. This is significant as it clearly establishes that the underlying blockchain based technology is safe, secure and cannot be tampered with. Why then has it not been used in enterprise business processes yet?

The simple answer is speed. Bitcoin today is producing between 3-5 transactions per second, which is too slow for most business transactions. When it comes to financial transactions, asset movements, supply chain management etc. where transaction speed is a core competitive component of any service today, many times with hundreds or even thousands of transactions per second, this limitation
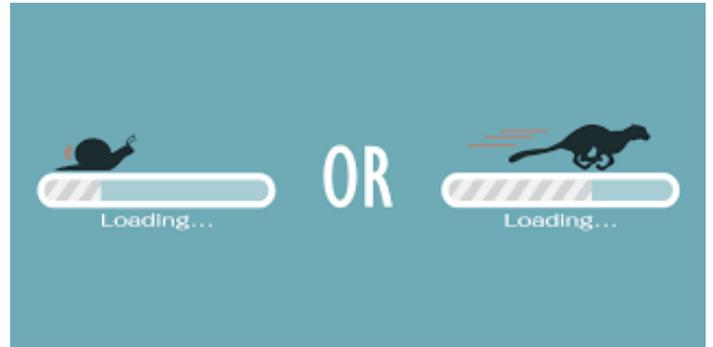
Blockchain value proposition

Figure 16: Cost reduction is the predominant objective of current enterprise blockchain networks

72% **Cost reduction**
Improved reconciliation efforts lead to efficiency gains that translate into lower operational costs

6% **(Incremental) revenue generation**
New services and business models emerge as a result of having access to a single shared source of records

8% **New market models**
A shared (industry) utility enables the development of entirely new market types and models that did not previously exist

14% **Hybrid**
A combination of cost reduction and revenue generation objectives
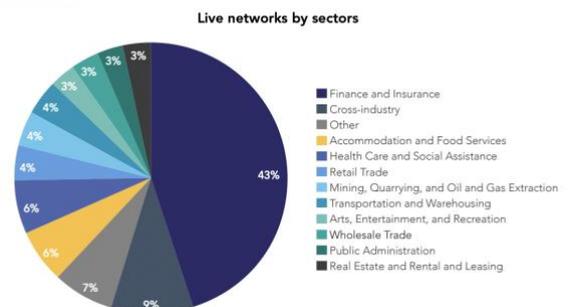
VALUE PROPOSITION

The key reason for building a next generation digital process is cost reductions. This is primarily achieved as the application can be deployed as a separate process parallel to the existing architecture and yet deliver higher security, transparency and traceability. This greatly reduces the need for component experts on every step of the transaction. All in all, delivering a significant lower cost of operation.

What industries are deploying today?

The Bank and finance sectors are leading the deployment of enterprise blockchain today, driven partly by the need to comply with new government regulations. Other sectors, like charities, are using the transparency of transactions to show how their collected funds are reaching all the way out to their intended cause. By the use of blockchain technology they can assure the donors that their funds are being used in the correct way and with necessary admin costs fully and transparently accounted for.

Figure 14: Nearly half of live blockchain networks have been launched by the Finance and Insurance sector

Live networks by sectors

3% 3% 3%
3%
4%
4%
4%
6%
6%
7%
9%
43%

- Finance and Insurance
- Cross-industry
- Other
- Accommodation and Food Services
- Health Care and Social Assistance
- Retail Trade
- Mining, Quarrying, and Oil and Gas Extraction
- Transportation and Warehousing
- Arts, Entertainment, and Recreation
- Wholesale Trade
- Public Administration
- Real Estate and Rental and Leasing

Introducing BlueBarricade Enterprise Digital Process (BEDP)

The BEDP application and service is the result of BlueBarricades long partnership with IBM and its core blockchain team. By enabling a blockchain based service at the lowest level possible in IBM Mainframes super computers, we erase the speed challenge by pushing the number of transactions from 3-5 per second to a thousand transactions per second! And we do this on the

Transactions per second

Transactions per hour

Bitcoin - 18 000 t/h

Etherum – 180 000 t/h

BlueBarricade - 3 600 000 t/h

same security level as +90% of all global credit card transactions are being processed today.
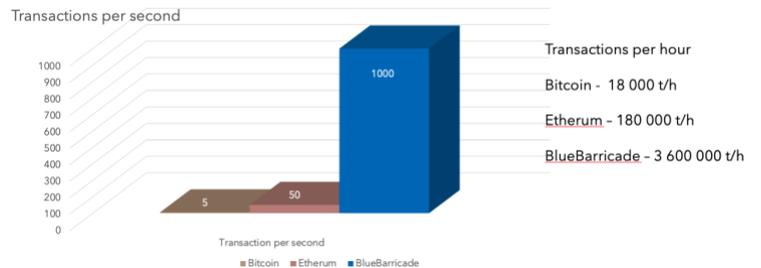
Ease of use with state-of-the-art technology. The BEDP consist of three main applications:

BlueBarricade Admin is the application that controls:

- Who is who in the BEDP
- Who can do what and who can see what in the BEDP
- Set up and configuration of Smart contracts

BlueBarricade Accelerator is the backend engine:

- Installs in IBM Mainframe or accessed as a service
- True enterprise grade blockchain service
- Fully optional with separate crypto card

BlueBarricade Explorer is the application that:

- Provide full visualisation on any transactions
- Intuitive dashboards for transactional data
- Add 3rd party audit peers

BlueBarricade Smart Contract

BEDP can be populated with any kind of data; financial transactions or any kind of information asset. The Smart Contract stipulates the conditions for execution of the different transactions included in the contract.

A smart contract can stipulate contractual fees, like wages for workers, upon completing specific stages of work. If the stage is not completed no funds will be released. If work is completed according to contract the issuing of funds cannot be withheld or changed unfairly. Thus, fair practice is ensured on both sides. If an employee leaves the project, the contract immediately updates with banks and other suppliers, thus lessening risks of fraudulent payouts.

This is a simple example of a charity using a smart contract to both set up, share and execute a building project. In this project an e-wallet service is utilized for easy monetary transactions.
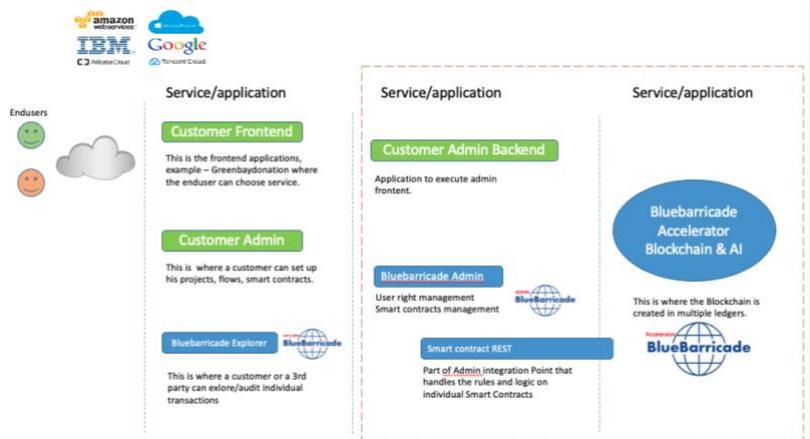

Native machine learning - prepared for any AI engine

All layers in the BEDP application from CPU level to UI are natively developed to support 3rd party machine learning or AI engines. Regardless of your use case there is value in the data; it's all about analysing data, identifying patterns or anomalies. This applies to any process from money tracing to early identification of trends in global IoT applications. The field of AI and machine learning is evolving fast though, so having these features natively architected from start ensures that we can support both current and future vendors, thereby adding value to your process.

Next step

BlueBarricade BEDP is today in pre-production and we only work with select customers. Full production launch is scheduled for q2 2021. If you want to know more about how we can reduce complexity, increase security, enable transparency and traceability in your system - all at lightning speed - please contact us for an initial consultation. Contact me>> or info@bluebarricade.com

Customer engagements

Charity	
	Challenge: As the world of charity grows so does the demand for transparency, i.e., where do the money I donate actually go? How much of my 100$ gets to the intended recipient? **Solution:** By combining an underlying blockchain with both an E-wallet application and a smart contract the donor receives full transparency and near real-time progress insight to the process of the donation. **Opportunity:** Charity is today one of the fastest growing sectors in the world, both from the donation side but also to the huge number of offerings for charity projects. The level of transparency is on the top 3 list of reasons for why people choose a specific charity.

Food chain traceability	
	Challenge: The customer produces fully certified halal meat and have a RFID based solution for track and trace throughout the value chain - from production to end user. This value chain needs to be 100% tamper proof with full documentation. **Solution:** By registering the metric data all the way from the individual animal and on each step of the value chain, we can store it in a blockchain with a shared ledger. The buyer can see all stops, repacks and shifts of transport, with information on temperature, time stamps, signoffs and more. No one in the chain can alter any data without notifying all other parties. **Opportunity:** The global Halal food market is estimated to be worth USD 1.17 trillion and fraud is unfortunately a growing problem.

Streaming live donations	
	Challenge: The customer is today providing a large community gaming platform. They want to add both direct sponsor/donation functions into the streams and the ability to introduce a branded crypto currency – all seamless and in full legal compliance. **Solution:** Combining blockchain, E-wallet and the cryptocurrency into a service that is seamlessly being integrated in an existing streaming service. All this being done in a closed loop financial system. **Opportunity:** By 2022, the online gaming market is expected to turnover $196 billion. It is now considered to be one of the fastest growing industries on the planet.

Bank & finance	
	Challenge: New regulatory compliance demands full traceability on international transactions resulting in a much higher transaction cost that limits market expansion. **Solution:** By putting the actual transaction in to a BEDP service, the customer have full traceability on every single transaction and can in parallel open up for 3rd party audits on a country-by-country basis. **Opportunity:** In the full-scale roll-out, the projection is to do approximately 200 transactions per second.