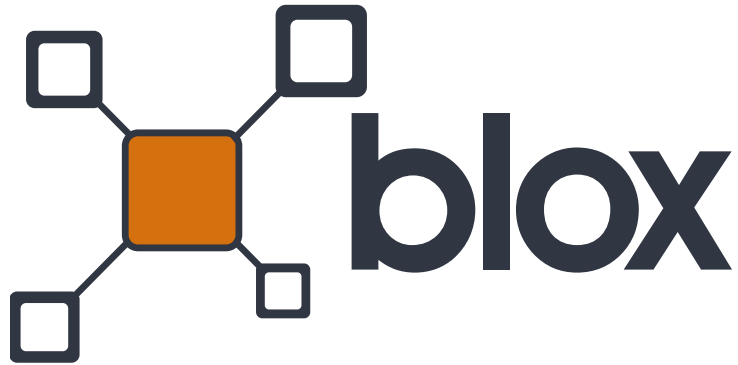


WHITEPAPER



Art of Code-Free Blockchain Platform

Abstract

A blockchain platform for experimentation can provide enterprises the much-needed capability to test and validate blockchain use cases rapidly. Blox provides a code free platform that can act as an experimentation sandbox to quickly set-up any type of blockchain network, build distributed blockchain applications and connect them to existing services as well as other emerging technology capabilities, such as Internet of Things and Big Data analytics, through a robust API Layer.

Introduction

Disrupt or be disrupted is the norm today. The major cause of disruption is the rapid emergence of new technologies that enable new business models with rapidly declining costs. Large enterprises are especially vulnerable to disruption as they tend to respond to the market changes at a slower pace. Creative destruction is cited as the reason why only 12% of the Fortune 500 companies remained in the list over the last 50 years. It is also forecasted that the average lifespan of companies in S&P 500 will shrink to 14 years in 2026, from 33 years in 1965.

This is because enterprises are under the pressure to compete with the innovative players, the likes of Google and Amazon, who have honed their skills to learn and test the latest technologies to deliver the best customer experiences. However, most of the large enterprises are focused on running their business and have no clue where to start, what to do and how to implement technologies that will ensure them to remain relevant in their industry. Blockchain is one of the technologies that poses this challenge large enterprises across multiple industries.

A recent global survey of more than 2,200 executives shows that Digital IQ scores have stagnated for almost the last 10 years. The main reason for this fall is merging the latest technologies with the existing legacy or digital systems which are running on multiple platforms. Introducing one new system goes through a lot of evaluations within the enterprise which is really a time-consuming process which may affect them in winning the race of digital transformation.

<http://www.aei.org/publication/fortune-500-firms-1955-v-2016-only-12-remain-thanks-to-the-creative-destruction-that-fuels-economic-prosperity/>

<https://www.innosight.com/insight/creative-destruction/>

<https://www.pwc.com/us/en/advisory-services/digital-iq.html>

Experimentation and iteration is the methodology is the preferred method of product development for most of the innovative companies in Silicon Valley. In his influential book, The Lean Start-up, Eric Ries presents Learning, Building and Measuring as the three key steps to experiment and innovate like start-ups. William Gibson, the renowned science fiction writer, had famously quoted that “the future is already here — it’s just not very evenly distributed.”

While experimenting with emerging technologies, the most efficient way is to identify and leverage the existing knowledge rather than starting from scratch. Exactly this is how “Blox” evolved. Blox is a code free platform that provides enterprises an opportunity to whip up quick experiments to validate ideas. In Blox the three key emerging technologies, Blockchain, Internet of Things and Big Data, are exposed for experimentations for the enterprises to fail fast and rapidly iterate ideas.

This white paper explains the problems that the enterprises have and the need for a platform which offers the ability to quickly turnaround any proof of concept on the emerging technologies. It also explains how this platform’s architecture allows the enterprise to pick the technology that they want to experiment and play with it by creating code free applications. It also explicitly states the potential role of this platform within an enterprise and the benefits it can bring.

https://www.telsyte.com.au/announcements/2017/7/25/australian-businesses-embracing-emerging-technologies-amid-accelerating-pace-of-change#_ftn1

Background / Problem Statement

To keep up with emerging disruptive players, it's a necessity to keep up with emerging technologies as they have staying power over the economy. Some of these technologies are making progress now but some may take a decade or more. The Telsyte Australian Emerging Enterprise Technology Study 2017 reveals that more than half of the organisations are currently undergoing large scale IT transformation leading to widespread investigation, planning and roll out of emerging technologies.

At CIO level getting fund for implementing the emerging technology solution is very difficult as an emerging trend may affect the IT departments as the innovation be sometimes odd with the legacy systems. Below are the pain points of the enterprise:

- Will the new technology allow the enterprises to move faster?
- Can the enterprise innovate on this platform atop one of the ageing back ends?
- Will the new technology cost less over the course of our ownership of it?

To answer all these questions that the enterprises have towards adapting emerging technologies, there should be a platform at a lower cost where they can try and feel the potential of implementing it as a solution.

When we looked at the situation we saw a lot of synergies in bringing the three essential emerging technologies together under a single code free platform. Using Blox platform we can help the enterprise modernization program by integrating the emerging technologies with the legacy systems. We also realized that the front end should be as effective in areas such as adapting for new technologies and hence provide code free templates to create better and faster UI for our customers. Making this transformation with the latest technologies and legacy systems is a massive effort. As Blox has considered all these factors while delivering products on time and on budget, the enterprise can concentrate on the functionalities leaving the technical challenges to the platform.

Solution

Blox helps the Enterprises to prepare for the future to attain the art of the next best in the digital transformation journey. It is a powerful platform where the existing digital technologies can be combined with the three key emerging technologies - Blockchain, IoT and Big data - to help enterprises accelerate their path to a breakthrough idea and to be a market leader.

There are several advantages of building and testing blockchain experiments on Blox:

Prebuilt - Configured Nodes: The most basic layer of blockchain are the nodes on which the applications execute. A blockchain network will typically consist of bunch of computers running the same protocol. Blox platform will be delivered with a prebuild network of node. This means that once Blox is set-up, it will be ready to run blockchain applications with little or no effort.

For each PoC, Blox offers a minimum of four prebuilt nodes on the blockchain protocol (chosen for the use case as the blockchain network). This plug and play model of blockchain setup helps to avoid the time needed in booting up the systems to act as nodes. This also helps the enterprises to try the same use case on different blockchain networks to figure out which best fits in the use case.

Blox's vision is to democratize blockchain experimentation, which is now a luxury reserved for very few. Blox platform will ensure that all enterprises have the opportunity to try on different blockchains and find one that fits their need best. Companies can start with a development approach to build an app that will integrate back into a blockchain infrastructure, which could be set-up as cloud. The goal here is rapid development, and the focus is on programming than infrastructure.

Onboard any blockchain: Not all blockchains are equal and Blox supports all major types of blockchains. Blockchains can be broadly classified into public, private and permissioned.

Public:

We run public nodes of Ethereum and bitcoin blockchains on our cloud environment, validating transactions in the network, thus participating in the consensus process. Transactions can be sent through these public networks and will be included in the blockchain if they are valid. Transactions can be read on the public block explorer. Transactions are transparent, but anonymous/pseudonymous.

Private:

Blox can spin out a private network for each enterprise with read and write access restricted to them. Private Blockchains are preferred when scalability and compliance, including data privacy and other regulatory guidelines, are key concerns. This network can be accessed only the enterprise team members.

Permissioned:

These blockchain networks operate under a group leadership. Blox helps to set up the group and create a consortium-based network where the consensus process is controlled by a pre-selected set of nodes. Consortium blockchains are mostly recommended for the financial sector use cases.

Blox's pre-built APIs

Blox offers a wide range of APIs across the aforementioned technologies: Blockchain, IoT and Big data

Blockchain APIs:

The service is aimed to empower enterprise developers to experiment with distributed ledger technology / blockchain by offering them “a rapid prototyping developer environment.” The blockchain APIs have customizable features and settings which are designed to be used in enterprise environments.

Developers can create digital assets and configure business logic to transfer assets more securely and privately among members of a permissioned, private and public blockchain APIs. Key API definitions include KYC API, Document Verification API etc.

IoT APIs:

REST APIs, are key for connecting devices to the Internet. Our Device management APIs grant developers to enable the connecting of things to APIs while retaining the right to revoke that access when necessary.

Data APIs enable the devices to transmit data to your applications, acting as a data interface. Service APIs allow your application to control the devices and serve as a function interface.

Big data APIs:

Blox's API layer sits between distributed computing applications and storage. Cognitive APIs process complex, unstructured data and deliver analytics. Enterprises

can use such APIs to create their own analytics dashboard to understand their own products and services.

Blockchain Analytics API - Big data analytics, machine and deep learning techniques are used to find insights and patterns in blockchain data. Data stored in the blockchain are loaded into the big data platform and analytics is done on the blockchain data. These analytics happen whenever there is a new event on the blockchain. This can help to find fraud and compliance related issues.

Blox API Management:

Utilize the Blox API Management to expose your internal service to others in minutes.

Blox API gateway provides a wide range of policies for fine-grained control over how, when, and from where your user community can access your APIs. To realize enterprise solutions full potential, Blox offers a range of connectors to connect to a wide variety of data sources, including those in-house, and in private and public cloud applications.

Blox API Portal allows to define and manage community of API consumers and publish a single point of API access for internal or external developers. API analytics helps to understand the API performance, usage and errors. It also provides the API metrics to the consumers.

Workflow (BPM):

Blox platform provides Workflow layer offering a complete solution to convert legacy processes within organizations to agile, web-based, efficient and streamlined processes. Blox Workflow automation offers a drag-and-drop environment that caters to ever-changing business requirements, delivering much needed process automation without an expensive re-haul of IT systems. Model complex processes with ease and seamlessly integrate workflows into new or existing applications. This is a very useful feature as these tools can use the data from blockchain as their source of truth while executing business processes.

Banking APIs :

Targeted at Financial services industry, Blox provides a platform that provides a whole array of banking APIs to try out. Enterprises can easily test how the distributed blockchain applications would connect and behave with existing services.

Due to regulatory pressures, more banks are adopting Open Banking standards which will revolutionise how banks and other financial institutions work. Blox platform is built to leverage that opportunity and make best use of the data, algorithms and processes

that will be exposed through APIs. Blox also have pre-configured Open Banking APIs that will provide much flexibility to financial organisations while testing out their blockchain ideas.

App Builder

Blox app builder provides the capability for anyone with basic understanding of programming, to develop quick distributed applications on any type of blockchain. The app builder allows dragging in pre-made process components into the blockchain emulator, which can later compile distributed apps that will work on your test network. You can also add your own code to this prototype, test and rapidly iterate using the Blox app builder.

Dashboard

Any platform is not complete without a dashboard that provides a snapshot of the work in progress, performance metrics and insights through analytics. Blox is equipped with a strong dashboard, that provides insights into all these measures and more. The user can customize the dashboard based on what are the metrics that matter to them. Blox also allows the feature to filter results and set alerts for events, which will come in handy during prototype demos and experiment showcases.

Conclusion

During the age of rapid innovation and technology evolution at a break neck speed, enterprises have to adopt experimentation as a key strategy to develop new business models in order to stay relevant to customers as well as to have a fighting chance against the new disruptive players. However, experimenting new ideas on emerging technologies are not easy. Blockchain is especially hard because the technology is very new and the experts who can engineer solutions are hard to find.

Blox is a code free platform that will enable enterprises to set-up a basic infrastructure and test solutions in a fast and cost-effective manner. Blox allows companies to truly understand the potential of these latest technologies in transforming their companies, by allowing them to couple their blockchain ideas with Internet of Things and Big Data Analytics with the click of a button. The vast array of APIs expedite the build time and as Blox is code free, the companies can drive their portfolio of experiments without expensive, specialized resources. Blox is the best blockchain experimentation platform in the market that will enable companies to discover the best approach to stay relevant despite the upcoming blockchain disruption.