vDice Development Roadmap

Here-in we will detail the various phases through which we will develop the vDice game, platform and brand. Outlined are the various milestones we will achieve for our users, stakeholders, and the ecosystem overall.

In total, there are 3 phases called: Origin, Vanguard and Pioneer; each with its own milestones, goals, and focus.

This roadmap provides an overview of the major developments and features. There will be many more changes along the road.

The development process is static, constantly changing and evolving. Development is never a fixed process. This is a longer-term roadmap, based on a 3-year development period. Due to the dynamic nature of software development, milestones within a phase might be worked on in parallel.

I. Origin Phase

We are currently operating within the Origin Phase, which contains three major milestones, and has a focus on stability, security, speed and efficiency of the core vDice game.
This is the game that is currently live, processing bets. It is the classic SatoshiDICE clone, implemented as an Ethereum Smart Contract.

i). Main Game Stabilization

The most important milestone for our users and stakeholders this year is the stabilisation of the main vDice game.

While it is live, processing bets, it still needs a few more months of refining and perfecting the code. This will provide the optimal codebase for developing out the more dynamic parts of the game itself. It will provide a solid foundation for making bet processing, on-blockchain, more efficient. On this foundation we will develop the vDice brand and platform.

ii). More Reliable, Efficient & Faster Blockchain Tx.

To make blockchain transaction processing for betting more reliable, key infrastructure, as detailed below, will be deployed:

a. **"Nested" Datasource & Partially Encrypted Queries:-**
the vDice main game Smart Contract is now calling the Oracle with a fully encrypted query. This means that the URL that is being requested of the Oracle to call is known to vDice and the Oracle only.

As a consequence, the TLSN proof is enough to prove what vDice did call (because the answer from the random.org server does list the specific query arguments). To somebody reading the contract this is all but obvious.

Using partially encrypted queries it is possible to encrypt just part of the vDice query and not all of it. For example, it is possible just to encrypt the API credentials and not the rest of the URL.

This should improve the confidence of anyone reading the Smart Contract.

b. **Multi-TLSN Servers:**
This new infrastructure will support the parallel execution of queries and a multi TLS Notary design.

As a consequence, vDice queries can be handled in a much shorter timespan. The average time to get the response out is moved down quite a bit (to ~8 seconds total, from the time the tx is confirmed). Bet processing time will be reduced by this amount.
Reduction in on-blockchain processing time is critical, if vDice is to compete with centralized gambling services, using centralized databases.

II. Vanguard Phase

vDice will stay Ethereum's leading blockchain gambling game.

As you will see from the below stages of the roadmap, we are at least 18-months ahead of the competition at the moment, in terms of technology.

We have studied the technology of the competition. There is very little they have developed properly. Given the current state of technological development in Ethereum generally, we are quite sure our competition will struggle to launch in the time-frames claimed, if at all.

So, we are confident in our position as the only LIVE blockchain gambling game on the Ethereum network, processing bets in a fully decentralized way.

Actually, with some of the technology we have on the horizon, we expect to be able to compete with mainstream gambling games (using centralized databases), as early as Q2 of 2017.

To make blockchain transaction processing more efficient and faster, key infrastructure, as detailed below, will be deployed:

i). '0-Conf' Precomputation:

The zero-confirmation ('0-Conf') feature is something we have been working on for a while already.

Under this system, vDice queries will be processed as soon as the Oracle's engine can see the unconfirmed transaction (with no need to wait for the transaction to be confirmed). The callback transaction will be sent _just_ if the confirmed transaction is successful (its execution didn't fail) and only if the confirmed transaction query does match the unconfirmed tx one.

By starting to calculate the result (and its proof) in advance, vDice saves some extra seconds (on average. ~7/8).

A solution will be deployed in this phase for this precomputation feature.

ii). New Proofs:

We have some new proofs that we are working on, in the conjunction with other leading enterprise providers in the Ethereum space. We collaborate very closely with other leaders in the Ethereum ecosystem.

One proof we have is undergoing heavy active development already. This is called 'Android Proof' and is available right now on the Morden test network. It is approaching the stage where it will be ready for peer-review and the mainnet.

This is a new proof type (different from the TLS Notary proof) which brings with it a lower computing time, moving the average time to get it from ~7 seconds to ~2 seconds.

On full deployment with this proof, vDice will easily be able to compete with centralised gambling service providers. Then vDice will be offering both the benefits of decentralization and none of the associated trade-offs for bet processing times.

Let's assume the decentralized exchange part of the Ethereum ecosystem maintains its current pace of development. Then we expect that pegged-tokens, tied to fiat currencies, will be ready very soon.

When combined with vDice, this will lead to the vDice platform allowing for betting with Fiat currencies (USD, Yen, EUR, etc).

iii) Status Page for vDice Administration:

A new monitoring system will be built and deployed, in order to increase vDice service reliability. A direct consequence of this is the status page showing any ongoing issue on the administration side, making monitoring and game administration much easier.

iv) Parallel Development of Further Games:

The first new game has started preliminary development already. The code is available here;

https://github.com/jamesgroton/vDice-Contract-Code/blob/master/binary1.7.sol

In the Vanguard stage we will begin to develop out vDice as a platform for smart contract gambling games. This will be in parallel development with the underlying technology that makes bet execution, on the blockchain, efficient enough to compete with centralized services.

The first game (code as above), is a basic binary options smart contract.

This will allow users to bet on the outcome of a specific binary event, both on-blockchain and (through our Oracle), off-blockchain.

We are fans of simplicity at vDice. Complexity is the enemy of security. And vDice is a security focused organization. As such, we believe that many of the hyped prediction markets (a more complex form of options market) will fail to launch an MVP in the foreseeable future. Ethereum will then be relying on basic binary options contracts like ours to fill the market need.

This game will be able to be deployed on popular social media sites like Twitter.

It is a popular trend to post on Twitter a binary option for people to vote on. This is used to gauge an idea of how users in a specific ecosystem feel about the outcome of a specific event.

With this binary options contract it will be arbitrary for a Twitter user to display this instead, with GUI. This will add an economic element to a trend already occurring on Twitter and other social media.

III. PIONEER

Stabilising our main game and its underlying technology makes it possible for developers to start working on their own decentralized blockchain gambling Dapps for vDice.

This is a major step towards achieving one of vDice's core goals. That is; to develop the vDice brand and site as a platform for developers.

At vDice developers can host their own gambling Dapps. As such, vDice will become a stable, reliable and trusted brand for gambling Dapps.

vDice will leverage the considerable developer talent working on various gambling smart contracts for Ethereum. These developers do not have the time and resources to grow their own brand. We at vDice will provide that.

vDice.io then provides a home for great Ethereum Gambling Dapps.

Bitcoin is the first blockchain. Bitcoin has a market cap. of around US$10 billion. Bitcoin is huge for gambling. Around 50-60% of *ALL* Bitcoin transactions are still gambling. Expect similar results for Ethereum, very soon.

With the Ethereum platform you can make gambling truly decentralised.

At vDice we have no servers, no accounts, no deposits. You only trust the blockchain. An Ethereum Gambling Contract runs itself. This makes Ethereum a unique platform. Everyone can benefit.

Anyone can write their own Gambling Dapp. It's just software. They can put it on the Ethereum network. Then they can ask vDice to show it on their site. They can benefit from our great brand.

Someone creates their own game. If it's good, they will benefit. vDice will be like the Wordpress of Gambling in this way: a platform for developers to showcase their quality gambling Dapps.

Through the power of the blockchain, it is the network itself that administers the games. Players trust in the code. They don't have to worry about the creators. Once it's on the Ethereum network it belongs to the network.

vDice will leverage that power in a complete way, during the Pioneer Phase of development.