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Public and Private Blockchains: Enemies or Allies? Why the Enterprise Ethereum Alliance will prove the latter

The Enterprise Ethereum Alliance is launching today (<http://www.enterpriseethereumalliance.org>). Several of the world's most prominent companies in the fields of technology, finance and natural resource have come together to create a standards body for private implementations of Ethereum. Many will have questions as to what this



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means for Ethereum and blockchains in general. Too often, private blockchain solutions are quickly dismissed by proponents of public network infrastructure. As someone who straddles the Public vs Private blockchain discussion, I'd like to share some insights regarding the direction I believe this technology is heading. When we look back 2, 5, 10 years from now, I think we will be surprised at how malleable blockchains are to meet the needs of individuals, businesses and governments.



The EEA launched on February 28, 2017.

First off, for those unfamiliar with the terms public and private in reference to



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blockchains, the differences can essentially be distilled down to what are the default permissions built into the network to allow new blocks to be written to the chain. A public chain will allow anyone to participate in the block creation process as long as they adhere to the protocol specification. In this case, a robust consensus algorithm (common examples are proof of work & proof of stake) is key in order to keep the network cohesive and prevent unintentional forking. In a private chain, the permissions for block creation are restricted and total power over the chain is given to specific trusted entities. By excluding potential nefarious actors (as long as the trusted entities can indeed be trusted) private blockchains make the consensus process much simpler. This, however, comes at a cost...a closed ecosystem.

The most common analogy used to describe public vs private blockchains is that of the internet vs intranets. This

is a useful way to initially conceptualize the differences and we are seeing strong similarities in the adoption trend, however, I am not convinced that blockchains must evolve in exactly the same way.

Regardless, the internet and intranets have both found utility and a place in the world's communications networks and I think we will discover similar principles may apply to blockchains.

Right now, companies (in general) are favoring private blockchain implementations as they construct proofs of concept and pilots. The logic of this is easily discernible, closed-wall ecosystems have the appearance of greater security especially when confronting the unknown. I can tell you from personal experience that boardroom anxiety is greatly diminished the moment you tell them that this can be implemented in a “closed sandbox environment”.

Proponents of public infrastructure

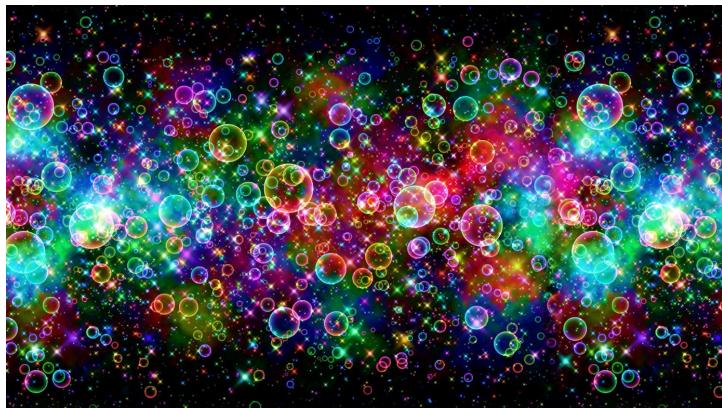
networks such as Bitcoin, Ethereum and others, sometimes do not see value in these experiments since they do not materially add to the transaction volume or overall immediate usage of the public network. I believe this is short-sighted.

One thing that blockchains do extremely well is allow entities who do not trust one another to collaborate in a meaningful way. This is one reason people see so much potential in this immature technology. So it stands to reason that eventually we will begin to see large scale deployments of the technology attempting to do exactly that, connect groups such as businesses, governments, churches, and the like. Public blockchains can already make this claim, however they currently fall short of particular requirements such as privacy and scalability. Private blockchains can provide solutions for these short falls and enable greater privacy and

transaction throughput because all the nodes are strictly controlled. However, there is a trade-off, they do so at the cost of their ability to connect any and all to the network.



Picture if you will a public blockchain such as Ethereum as a giant bubble (and no, I am not making an reference to the price speculation). Inside the bubble all participants can interact freely and transact seamlessly across its infrastructure.



Now picture what many pre-suppose will be the infrastructure of private networks, a vast universe of isolated bubbles each one created for a specific purpose. In this case the bubbles may perhaps interact, but a bridge must be built for each and every set of bubbles to enable communication. As adoption of blockchain technology continues to grow, you can see how maintaining all the bridge connections between an almost infinite number of new bubbles quickly become untenable.



What is more likely to happen is more like the picture above only more exaggerated, where a central (public blockchain) bubble becomes the universal connector for all the small bubbles (private blockchains) around it. This way, a private blockchain can build a single bridge into the public blockchain and all necessary connections to other blockchains are facilitated through that single bridge. This is a much more sustainable model.

This is why the Enterprise Ethereum Alliance is so critical. Up until now we have seen various private blockchain consortium come together with some measure of success, such as

Hyperledger (under the Linux Foundation umbrella) and R3 (Banking consortium with over 75 of the world's largest financial institutions).

However, they lack what may be a critical component...a public blockchain running their protocol specification.

There are a number of benefits to having a public blockchain specification to branch off from:

1. Code base will be more battle tested...People want to steal that money!
2. Community incentive to improve the network (because of native token appreciation)
3. Orders of magnitude more developers (which leads to greater efficiencies in application development)
4. (Future benefit) Hub for interoperability between chains

What I envision happening is a general

trend amongst all private blockchain protocols to seek for interoperability standards. My guess is that this will be easiest for groups which base their code on public chains. There will be those who put up resistance to the painful process of finding common ground, but eventually there will be no place for private chains that cannot connect into a greater ecosystem.

On the other side of the coin, public blockchains should be actively collaborating with private blockchains. There is a lot to be gained by engaging with development teams that are focused on implementing private blockchain implementations. In general, they can offer:

1. Improvement recommendations based on business needs
2. Well defined real world use cases
3. Deep knowledge of regulations and laws
4. Increased mainstream adoption

and network effect

The end result is a vastly stronger ecosystem overall.

Today is a great day for the Ethereum community. We embrace the birth of the Enterprise Ethereum Alliance and look forward to the benefits which their contributions will bring. I particularly like that they chose to be called an Alliance, for I believe that in the end all public and private blockchains are truly allies.



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