Tokenize the Enterprise

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> *Learn how to implement token economy to your existing business model and decentralize your enterprise in a multi-step recipe by Trent McConaghy.*

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Tokens are the new “new” thing in the blockchain space. Just when everyone thought that blockchains were hot enough, everyone realized that tokens *are* the business

model for Web 3.0.

A decentralized system spreads control among many parties. It may or may not be tokenized. The key benefit of tokens is to *align incentives* among participants of the ecosystem. It's a positive-sum game among the tribe of token holders. (And let's not forget the windfall of a token launch, if you choose that path.)

So far, only startups have launched tokens. But what about enterprises? Could we tokenize Facebook? What about Amazon or IBM? How? What would be the benefit?

In short: tokens will eat the enterprise *from within*, because investors will make money *and* the community will gain. We'll have crypto tribes that started as companies. Repeat across many enterprises and it means goodbye to the stock market. Finally, this turns out to be a new response to the Innovator's Dilemma—how can enterprises compete given their tendency to protect their profits (aka the status quo)?

Let's explore in more detail.

Approach

Here's the recipe, for each enterprise:

1. **Tokenize.** Shares become tokens.
2. **Decentralize.** Spread power among more people; users get tokens for past and future contributions.
3. **Melt into the community.** Over time, both value and power spreads further.

When one or a few enterprises do this, and actually *make money* for their shareholders in doing so, then other enterprises will follow suit. In the end, it's all crypto tribes.

Example: Facebook

Let's walk through this recipe, using Facebook as a example.

Step 0. Status quo

Facebook is at odds with its users. Facebook's founders and shareholders have made massive amounts of money. Yet its users didn't, despite contributing the key personal information and content that is the heart of Facebook. This is a basic tension: Facebook has a bias to openness, versus users' privacy.

With its billions of users and high engagement, Facebook has become enormously powerful. Yet it's controlled by a small handful of people. This is dangerous for society. Especially when it's not structured to handle such a responsibility.

There have been various proposals to improve the situation. One idea is to get the courts to consider it a monopoly and break it up. This relies on slow-moving government processes.

Other ideas come from the blockchain world. Namely: overtake Facebook from the bottom-up, by building something decentralized, and try to get the users to come. We've seen many such efforts at decentralized social media. But success is limited so far. The greatest challenge is how to populate the network. It's chicken-and-egg: people only join if their friends are there. It's hard to crack two billion highly engaged users.

There's a variant: build something decentralized *and tokenized*. This can only help, because early token holders = your first users, and they're incentivized to bring in their friends. HODLers gonna promote. So, tokenization increases virality. But it's still no guarantee to overtake a network with two billion engaged users.

These ideas assume a start at zero, and attacking from below with something faster, sleeker, more viral. And they might work; but I've come to realize there's another way. Tokenize *from within*. Here's how it works.

Step 1. Tokenize.

In this step, Facebook shares (ticker:FB) get converted to tokens.

There are about 3 billion shares in Facebook. So here, Facebook (the company) issues 3 billion Facebook tokens ($FB) on a blockchain.

Then, Facebook converts each of the 3 billion shares to a $FB token (share → $FB) in a contractual arrangement. Or, it simply starts using the blockchain as the registry of who owns what (share = $FB). Delaware is moving towardsmaking the latter possible.

Either way, we end up with a blockchain holding all $FB tokens that have replaced the previous FB shares. It's tokens as securities.

Step 2. Decentralize.

Up until this point, the governance of the tokens is still in the hands of Facebook (the company). And it's still one share one token. Step 2 is where the real change occurs:

spreading power, and tokens for users too.

The following need to happen simultaneously.

- **Spread governance.**

Change governance so that the community has more control; then that $FB is not controlled merely by Facebook the company. The key responsibility is setting the rules for protocol updates (API changes) and token governance (monetary policy). There are many possible governance structures, from (1) fully on-chain and automatic (still dangerous, as we've seen with TheDAO), to (2) using a traditional non-profit controlled by a set of 20+ caretakers, to (3) starting as a traditional non-profit then becoming automatic over time (my fav, like in IPDB).

- **Make the blockchain public-facing.**

Anyone can read to it or write from it; and no single entity is running all the servers. This means that key protocols for Facebook functionality are open, specifically the ones where tokens are given or spent (see next two bullets). Ideally *all* of Facebook becomes open source. Wouldn't that be cool? This is more than just a pipe dream, since open source would actually benefit Facebook the company in this new regime. And in blockchain-land, the value ultimately lies in the (fat) protocols, not in the implementations.

- **Tokens for *past* value-add.**

Facebook (the company) issues 3 billion *more* $FB tokens to the *existing users* of Facebook. It would reward users proportional to their degree of interaction with Facebook over its history. You get $FB for every post made, for every picture shared, for every poke. Or perhaps more in line with the status quo business model: you have a decentralized service that asks you to use your data for marketing purpose in return for other value.

- **Tokens for *future* value-add.**

Facebook sets up rules such that value-creating actions on Facebook get $FB tokens. For example, each time I post a picture, I get $FB. There is an emerging design practice on how to do this well (e.g. avoid spam), with precedents such as Steemit, Brave's basic attention token, and userfeeds. Furthermore, people can earn tokens for other value-adds too, such as adding features or improving performance.

When this is done, it will be obvious for crypto exchanges like Kraken or Interledger to add $FB tokens. So in steps 1 and 2, FB value has been moved from the traditional exchanges

(stock market) to new crypto exchanges.

What becomes of Facebook the company? One option is to dissolve it. This is broadly ok because employees are incentivized to contribute simply because they own $FB; though I acknowledge there are messy details to sort out. Another option is for Facebook the company to simply become a service provider to the public $FB blockchain; it's incentivized to improve the service because by doing so it earns more $FB tokens on behalf of its employees. Now note that other individuals and organizations are able to improve the service too.

In my example, I gave 50% of $FB to existing shareholders and 50% to users. It could be another ratio. But "half" is a good rule of thumb for a starting point—each side is within an order of magnitude and avoids nit-picky arguments.

Step 3: Melt $FB Into the Community

Time to melt. [Image CC0] [or, this]

This step is something gradual that happens over time. At the beginning of this step, half the $FB tokens are owned by the previous shareholders, and half by the users. As time goes on, it could spread out more as users earn $FB tokens for usage, or more people buy $FB due to the lower friction to buy it.

And some will hold on for dear life. HODL those $FB tokens. *Facebook maximalism.* You heard it here first.

You might ask why would Facebook shareholders ever go for this scheme. The main reason is that *it will make them money*! That's the chief driver of a typical shareholder. It's a huge value add if Facebook the company found a way to not be at odds with its users, the way it is now. And in fact it's not just a neutral relationship; users are incentivized to *add* value. Moreover, it liberates Facebook from quarterly earnings reports that are the bane of planning long-term and doing the right thing. Instead, there is a balance between building the business and building community. This alone could drive the value more than 2x, which then pays for itself. As bonus value, there is improved liquidity due to lower friction to buying $FB than there was in buying FB shares; and finally there are fewer bottlenecks to adding value since anyone can improve the code base.

Example: Amazon. Tokenize the *Business Unit*

Here, using Amazon as an example, I describe tokenizing one *business unit* at a time. It has the same result and same benefits of tokenizing the enterprise all at once, but with lower risk.

Let's take a quick step back, for context. Many folks are excited by how blockchain with IoT (Internet of Things) technology could help transform the supply chain, for everything from cars to drugs to intellectual property. It could bring transparency to previously opaque sectors, reduce fraud and therefore insurance costs, and unlock new business models.

However, this decentralized dream could be stopped dead by the new octopus: Amazon. The original octopus was Standard Oil, with its tentacles and massive wealth touching every corner of the planet. Amazon is following a remarkably similar pattern. (Need convincing? Read about Rockefeller then Bezos.)

This means that the incumbents with their emerging decentralized supply chains are headed into an all-out war with Amazon. It's not clear who will win.

There's another path. *The octopus itself* decentralizes. And it does so by choice.

The recipe for this octopus named Amazon could be like Facebook, converting the whole enterprise at once. But there's a lower risk option for Amazon. Amazon itself already has many independent business units. They each have their own API, and their own profit & loss. In fact, this API-per-business effort is precisely what spawned AWS more than a decade ago.

So, here's a simpler, lower-risk path for Amazon:

1. Tokenize + decentralize *one* of the business units.
2. If that works, repeat for other business units.
3. Once this has happened for all the units, Amazon is tokenized and decentralized.
4. Over time, it melts into the community.

More Examples

Let's look where the biggest payoff will be. One is where enterprises are at odds with their customers or broader communities, and therefore have the most to gain by aligning incentives. Here are some:

- **Visa.** Visa is under the interests of its shareholders and banks. It's always been at odds with merchants with high fees; this has led to billion-dollar lawsuits. So, Visa could tokenize and include merchants. This is similar for other credit card companies too.
- **Uber.** Let Uber shareholders, drivers and riders unite in tokens, to share in the value creation. And while we're at it, let's tokenize taxi commissions too and let the exchanges sort out where value should flow. But, won't self-driving cars contradict the drivers' interests? My answer: let the network hard-fork to both options. The section below on Innovator's Dilemma elaborates;)
- **Twitter, Medium**, and really all existing social media. This is just too obvious. If you feel like you're missing something, read this. Let's just tokenize and move on already.
- **Universal Music Group, Sony Music, Warner Music Group.** The big three record labels often find themselves at odds with the musicians they represent, not to mention the rest of the music ecosystem. In tokenizing and decentralizing, we can start to align the interests of everyone.
- **Spotify, SoundCloud, Netflix, Getty**, **Steam,** and really all media distribution and aggregation/filtering/recommendation platforms, from music and movies, to photos and video games. Spotify: ICO not IPO? SoundCloud: here's your biz model. Netflix: get your community even more rabid. Getty: kickstart your community. Steam In Tokens = SteamIT (heh).
- **IBM, Microsoft, Intel, banks, etc.** Dear enterprises hugging blockchain already: here's your endgame. When shall we start?

Historical Precedents

A tokenized, decentralized enterprise might seem like a stretch at first glance. Perhaps even a huge stretch. But, we have precedents which show us steps towards this:

- **Business unit with a tokenized core.** For example, almost every airline on the planet has some sort of "air miles" program. Many of these have even spun out into their own businesses, such as Air Canada's Aeroplan. Blockchain experiments abound for these kinds of applications, from air miles to ticketing.

- **Series-A stage startup that tokenized its core.** Numerai switched to rewarding its community of data scientists in tokens, turning zero-sum game among scientists to a positive-sum game. Next up—decentralizing the tokens.
- **Series-B stage startup that tokenized its core.** Messaging app Kik introduced Kin tokens, creating a positive-sum game for its ecosystem.
- **Enterprise that tokenized its core.** For example, reportedly about a decade ago some of the big credit card vendors tokenized (but didn't decentralize) their internal flow of value. This led to big savings on currency exchange, lowered friction within the network, and more.

Stock Markets

After one enterprise tokenizes with success, i.e. makes $ for shareholders, it will spur a second enterprise to do the same. Then a third, a fourth, and so on. Before we know it, most enterprises (especially publicly traded ones) could have tokenized, decentralized, and melted into communities.

Maybe some enterprises will hesitate. Or leaders will have their own selfish reasons to not do it. Well, we might not have to wait for a publicly traded company to tokenize itself. Instead, if a community gathers enough assets, it could simply buy the majority of (voting) shares on the market, to gain control the company. Then that community tokenizes, decentralizes, and melts the enterprise. It can be a domino effect: done in a good order, the wealth creation from tokenizing that company may be enough to buy the next company on the stock market. And so on and so forth. (Alas, this is also a new angle for corporate raiders..)

Either way, the result could be: every single company on the stock market has tokenized, whether it chose to or not. Traditional stock markets as we know them will be empty. The new tokens on crypto exchanges. Corollary: buy more Kraken. Or, run an Interledger node and become your own exchange:)

The Innovator's Dilemma

Background

In the late 1990s, I was wrapping up undergrad studies in Canada. Many of my friends had gone to work for Nortel, then Canada's biggest tech company. Nortel had moved from providing telephone equipment to network equipment, just as the Web took off. This was the height of the dot com bubble. Nortel's valuation was in the stratosphere.

How do you justify such a valuation? One of my friends was an advisor to Nortel's top managers, who were asking this. If you don't know how, then selling might be a great idea, as AOL-Time Warner and NSI-VeriSign did then.

Or, you can try to live up to the valuation. Nortel aimed for this. But they had a constraint: they could only consider opportunities that will bring at least a billion new dollars *soon.* Stuff that would move the needle. This precluded them from doing the nonlinear emerging stuff (nowhere near $1B); and from cannibalizing their business (not *new* $).

Right around that time, Skype launched. Nortel's response? "Tiny market—pfff" and, since it overlapped with existing phone-biz revenue "it won't add new revenue". Disgusted, my friend quit Nortel—and joined my startup:). A decade later, Nortel was gone.

And in fact, these constraints of "*a billion dollars or it doesn't matter*" and "*why would we cannibalize ourselves?*" exist for enterprises even when valuation isn't sky high. Enterprises try to preserve their status quo, to preserve their profits—at the risk of death by disruption. Clayton Christensen's 1997 book The Innovator's Dilemma described this problem.

Solutions So Far

Christensen's proposal was for the enterprise to spin out a company, and let that spinoff innovate on its own without the enterprise hampering its movement. Then, if the company did well and got to truly needle-moving revenue, then the enterprise could acquire it again.

Now, enterprises have even partly institutionalized this approach, by running accelerators or incubator programs. That way any needle-moving startups that emerge—spinoffs or otherwise—are within reach of the enterprise.

There's another solution, though it's not for the faint-hearted: the leadership cannibalizes aggressively, current profits be damned. Axel Springer did this: it ate its print business with digital, and in the process became the world leader in online classifieds. Now, despite its 71 years, 60% of its revenue is from digital.

A New Solution

"Tokenize the enterprise" is a new answer to the Innovator's Dilemma. It allows the enterprise to embrace change, because the enterprise has become the community, and vice versa. The community can decide if it has the courage to embrace change. And, crucially, if some subgroup doesn't agree, it can splinter off (yes, fork) to do its own thing. Then, a billion dollars doesn't matter. Communities can self-organize around the original community or the new one, based on their beliefs. Just like ETC vs ETH.

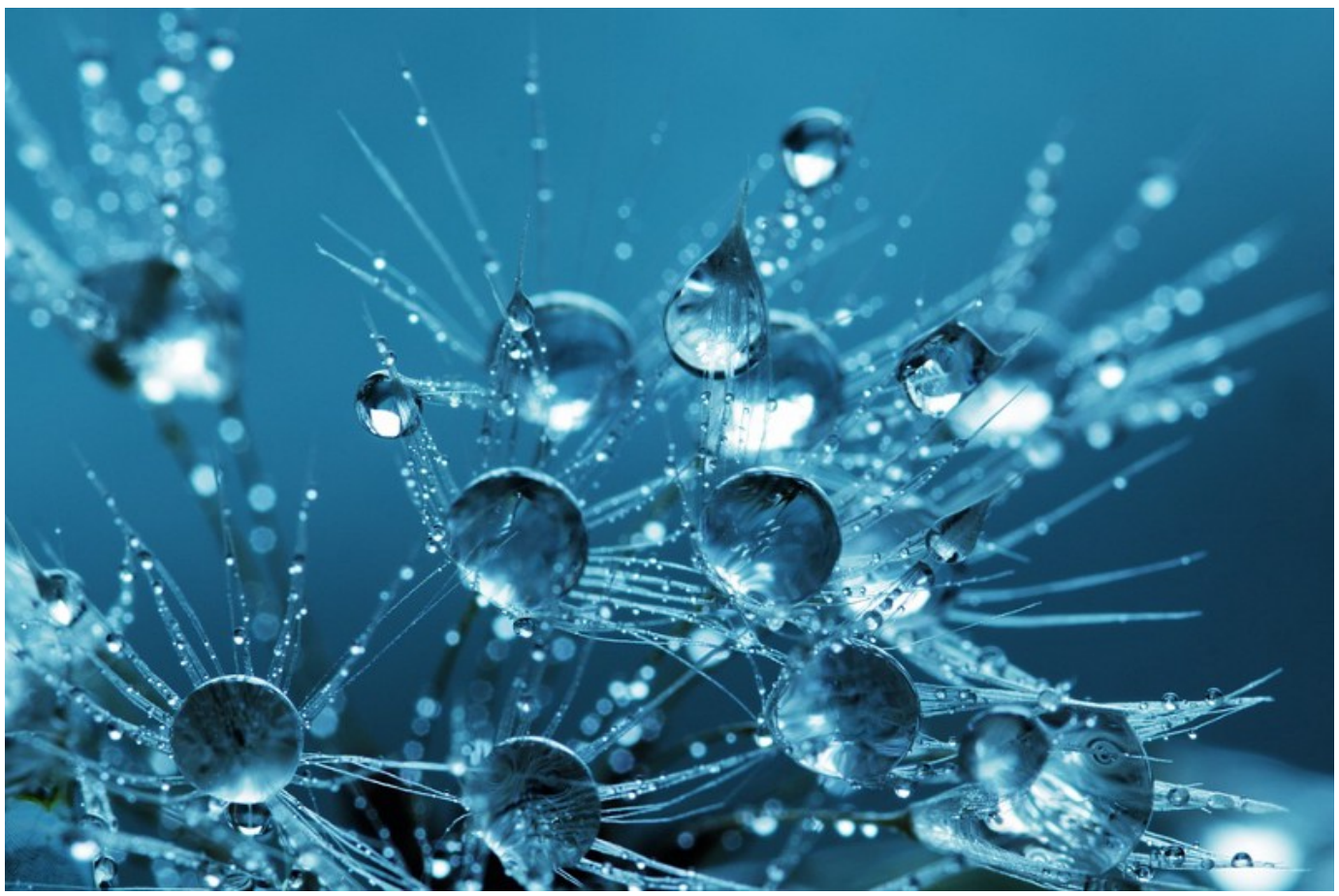
Put another way: for the tokenized enterprise, *hard forks are the new spinoff*.

Coase Theorem

The new communities will be much more fluid. Membership in each tribe is really mostly about what tokens you own, and therefore what communities you are incentivized to contribute to.

Coase Theorem means that if transaction costs within an organization are radically lower than between organizations, then organizations grow giant. Hence, large enterprises.

But blockchains change this. Blockchains radically reduce the cost of communication between organizations, compared to within. So, the natural size for an organization can be far smaller. So, once large enterprises have tokenized, then it will also be natural for them to split into smaller and smaller entities; and to re-form as needed. (Thanks to Ian Grigg for this framing.) Is this the new *liquid enterprise*?



Towards liquid enterprises. [Image: cc0]

Hollywood has actually done something similar for decades: a group of financiers, producers, directors, crew, and actors form around a specific movie project. They make the movie, make the money, and move on. The groups are different movie-to-movie.

Conclusion

What I've described might sound really far out. But, we have to try to imagine. And with just a

small stretch of that imagination…

Enterprises melt into the community. The stock market melts into crypto exchanges. Innovator's Dilemma spinoffs = hard forks. The future of business will be token tribes, formed Hollywood-style.

Let us paraphrase J.B.S. Haldane to remind us: *The future is not only stranger than we imagine, it is stranger than we can imagine.*

Are you ready?

FAQs

- ***Q:*** *After Facebook converts FB shares to $FB tokens, why should it be able to issue more shares? It shouldn't be able to control the monetary policy like that.*
- **A:** Actually, we need to decentralize first, with clear governance that isn't just by Facebook the company. Then, and only then, can Facebook issue tokens. And, it's still not going to be an easy task. Or perhaps FB has two tokens, one for shares and one for usage. Real time strategy games are a great example of successful multi-token systems.
- ***Q:*** *Why would Zuck give up control? Bezos? Page? Ellison?*
- **A:** First, remember that they could still be the leader of their respective tribes. We've seen this for pseudo-decentralized systems like Dee Hock(Visa), open source software BDFLs like Linus (Linux) and Guido(Python), and for new decentralized systems like Vitalik (Ethereum) and Zooko (Zcash). So, it's not the end of the world for Zuck. Or perhaps, they'll set things up such that when they retire, control passes to the network. And if they resist, perhaps they'll just get bought out and tokenized anyway.
- ***Q:*** *I'm going to use your suggestion __y__, is that ok?*
- **A:** I'm happy that my writing has inspired you to action:) I'm not stopping you. Just know that some of the recipes almost certainly need refinement to be legal in at least some jurisdictions. I wrote to paint a vision. Think impressionism not Sherman Act.
- ***Q:*** *Speaking of the Sherman Act, how will this affect current (near) monopolies? What about "decentralized" monopolies?*
- **A:** Remember the $FB example. The current ones get melted into the community. After that, we better make sure we get decentralized tokenized governance right. This is a huge discussion. Automation and forks play a role; so do existing laws and legal structures. We have a lot of work ahead of us.
- *Q: This is more of a comment: this really doesn't sound possible, legally or otherwise.*

- A: Consider this. Rewind ten years ago to 2007; how real did the idea of decentralized electronic money seem? Or, rewind three years ago; could you foresee the current token explosion? Could you foresee regulators working to account for blockchain technologies like they've been doing? Let's keep asking what scenarios could help society at large, and build towards that with both technology and law. The future tends to be stranger than we can currently imagine.

Acknowledgements

Tokens are in the zeitgeist so much that others may have had similar ideas. If you've seen similar thinking elsewhere; I'll be happy to reference it.

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