



Will Web3 change the world for the better?

The next generation of the internet can help us super-power our efforts to build a more sustainable and inclusive economy

Bettina Warburg

Co-founder & Managing Partner
Warburg Serres, Animal Ventures



N.B. This essay is an edited version of the transcript of Bettina's 20/30 Visions interview, which you can watch at www.bridgesfundmanagement/2030Visions.

Web3 is essentially a blockchain-enabled internet. And it's the future: all the digital world that we know and use today will eventually run on a Web3 technology stack.

When we think back along the development of the Internet, there were actually a number of different sea change moments.

What we think of today as 'web one', in the early 90s, was really just a digital publishing concept of the internet: static HTML pages that were largely a 'read-only' experience. Then we got Web 2.0 – the internet we mostly still use today – which became more of a two-way interaction, a 'read/write' experience.

But there are a number of downsides to the structure of Web 2.0.

One is that it's centrally mediated through a handful of companies. So your experience of the internet is really driven by the top five tech companies that built and maintain a lot of that infrastructure, such as Google, Facebook, and others.

Second, there's no real verifiability. It's like the old New Yorker cartoon that showed a dog sitting at a computer, and the caption says: "On the internet, no one knows you're a dog".

Another downside is that it's not very composable. If you were building a new feature in Facebook, say, you could use libraries or other pieces of code that have already been built at Facebook. Although we have lots of open-source tech today, we don't really have this ability to mix and match lots of code. So instead, we have to build things from the ground up. Or we don't build on top of these different architectures, because that creates too much platform risk.

The final downside is that our internet today is predominantly built on the business model of advertising. So ultimately, you – your data – are the product.

When we talk about Web3, we're really describing a paradigm shift. We often talk about it as a 'read/ write/ own' internet: identity, data and assets are ultimately controlled and owned by users. And we'll have web services that are much more decentralised. So we can start to imagine really unique user experiences.

People have probably heard about different crypto assets, like Bitcoin, or Ether, the native asset for the Ethereum network. But when we talk about assets, what we're most interested in is not this speculative marketplace for trading digital assets. It's much more about thinking of these as essentially network tokens.

Everything that's built on Web3 architecture is open-source autonomous code that's living on a shared computer. So it might not feel that different when you use an app that's built on Web3. But because it's a shared computational network, and there are tokens – these digital assets being traded to support that architecture – as a user you could really own your data.

WEB3 AND THE CLIMATE CRISIS

Climate and Web3 don't usually go together in people's minds (and certainly not in mainstream media). But when we think about owning your own data, or being able to have identity or privacy, or digital uniqueness in the world, those are actually primitives that can really drive a regenerative economy.

We're seeing that in everything from advances for artists and creators, so they can be more economically sustainable, to sustainability projects ranging from

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Bitcoin is notoriously a highly energy-intensive network - but some of the new Web3 platforms are starting to embed sustainability at the network level

(Photo by Kanchanara on Unsplash)



dematerialisation in supply chains, to carbon credits, to charitable causes.

I think we're in a moment of real opportunity in Web3 to use the tools of financial protocols and open-source, autonomous software to totally re-architect the incentive structures behind a lot of our products and services.

We're currently in what we call the protocol wars. There are currently (in my view) five networks that are vying to be the underpinning of our digital lives going forward. These are shared computers, made out of peer-to-peer nodes, that architect the network and really maintain the state of a virtual machine.

In terms of climate, there's an opportunity to really ingrain sustainability at the network layer. For instance, the Ethereum network – the second largest network in Web3 right now – has recently converted from a 'proof of work'-based architecture to become a 'proof of stake'-based architecture. So it went from being similar to Bitcoin, i.e. a highly energy intensive network, to become a network whose consensus mechanism and security model are now 99.9% more efficient. That's a major upgrade.

There are also some very interesting projects working to measure the carbon footprint of the network itself; and even some projects looking at how you embed within smart contracts (so code that runs on these networks as apps) the tools to offset this carbon.

And then you get to the top layer, i.e. applications, which is probably where most people will see the intersection of climate and Web3. Here we're seeing people launch everything from new kinds of

carbon tracking and financing tooling to totally new incentive models for regenerative finance. I personally believe these kinds of bottom-up solutions are going to be even more bootstrapped by technology solutions in Web3.

Another really important intersection point is standardisation – so using blockchain-based taxes, smart contracts and open source code to drive much greater standardisation in the climate space. So you could do carbon credits, for instance, with marketplaces and finance on top that are easily tracked and traded.

This incentives idea is one most people miss. We know, for instance, that promoting equity for household women and girls can really be a driver for climate mitigation. Web3 potentially has a role to play here, because you can offer access to capital, and track the use of that capital, and ultimately open up economic resources to the unbanked, or places that have lower socioeconomic access.

That could mean lending tools for farmers, or reforestation initiatives, or Open Data architectures for science, or any number of grassroots initiatives.

WHERE WEB3 MEETS AI

I'm very excited about the intersection of Web3 and AI.

Thanks to AI, the knowledge that's accessible to us is going to advance drastically. We're going to have access to these high-level analyses of huge datasets. But the challenge is that from a cognitive standpoint, we won't have the understanding to verify the outputs.

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With Web3, because we have this shared computer, anything that's fed into it, any datasets that are trained on a Web3 architecture – you're creating this verifiable compute.

I believe we're looking at a world where the biggest transformations will be achieved by harnessing AI in open datasets, and having a computational architecture for open data that is really Web3 based.

Ultimately, if we're using these exponential technologies, ideally they will allow us to transcend human capability. And by transcending human capability – whether that's in terms of data analysis or some other topic – we can transcend problems of human scale. Of which climate is clearly one.

Technology's not the 'be all and end all' solution. But if we can super-power ourselves through the use of open Web3 architecture and new tooling from AI, a lot of opportunity will open up.

PARTY LIKE IT'S 1999?

For Web3, this is the equivalent of 1999. We still don't have the number of users or levels of adoption that would represent real scale. So there's still a big opportunity to shape how Web3 emerges.

Often, we see standards drive big up-ticks. I think there will be identity and privacy standards that will be major drivers of adoption. There are several standards out there right now. But when we see something coalesce, we'll have this new primitive.

The other major factor is regulation. We've seen a lot of growth in DAOs, which are decentralised autonomous organisations. These are companies or organisations that are code-based; there's not necessarily a board, but they can create their own rules whereby individuals are incentivised through governance tokens for different kinds of behav-

iours – so maybe those who contribute the most code have more voting power.

So you are really moving away from the traditional board seat to a position where, if you're investing in these kinds of projects, you're also expected to participate and vote and maintain them.

That's why this is such an exciting space: it's really not just tech, it's tech that's encoding a lot of human values and human interaction that we used to rely on trust or governments for.

As a futurist, you have to be an optimist. But I think the projects that I'm seeing are really fascinating. If we just look at tokenisation and incentive architectures based on Web3, we really can be optimistic about putting data, assets and identity in the hands of users. That's a recipe for a lot of creativity and a lot of optimism, even on climate. I think it means we'll see entrepreneurs all over the world, not just the usual places that are more traditionally innovative.

This is not tech solutionism: it's about how we can superpower our efforts, using the tools that are available. And that's my big hope: that people look at Web3 with a new lens and say: "Wow, if I have a shared computer, what can I build?"

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Bettina Warburg is a leading investor, researcher, and speaker on Web3, blockchain and emerging technologies. Her distillation of these complex topics continues to be used by university programmes, executives, and major conferences as foundational explanations. In 2016, Bettina was invited by TED to be one the first speakers ever to unpack the topic of blockchain to a global audience; her talk has been viewed by over 4 million people. Bettina is a Co-Founder and Managing Partner of Warburg Serres and Animal Ventures, and invests into early-stage assets across the technology stack of Web3 ecosystems – from core infrastructure to middleware and apps. Bettina lectures as an Adjunct Professor at the University of Texas School of Information in Austin and authored the Basics of Blockchain (First edition, 2019).

The Ethereum network has switched to a much less energy-intensive model





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