

COVER STORY

New Kid on the Block

Thanks to He Yifan, China is pioneering its own state-backed version of Web3, internet infrastructure that runs on blockchain.

BY CHANG CHE — JULY 24, 2022



Illustration by Luis Grañena

He Yifan thinks cryptocurrencies are a “Ponzi scheme,” but his Hong Kong startup, [Red Date Technology](#), relies on their underlying technology, [blockchain](#), to revolutionize the internet.

Blockchain, He told *The Wire*, “has actually changed everything in the future — it’s changed the entire IT-tech picture. I’m not saying the current internet will be replaced. But it will be just one of two layers.”

A graduate of MIT’s Sloan School of Management, He is working to pioneer a version of the World Wide Web that runs on blockchain — what some call ‘Web3’. With loosely cropped hair and warm, crinkly eyes, the 46-year-old talks about Red Date’s signature project with the evangelical energy of early internet optimists. Although the technical details are complicated, he often uses a simple analogy to describe what he says is the coming thousand-fold increase in internet productivity: just as conference calls made telephone calls more efficient by eliminating the need to move data linearly, from point A to B, blockchain will similarly broadcast data over the internet.

“You guys need to realize that the internet was built on one-on-one phone call technology,” he told the audience at a recent Red Date-sponsored summit in Hong Kong. “Even today, when 99.99 percent of IT systems communicate with each other, it’s one-on-one. Why should you give human beings the right to have conference calls and not IT systems?”



He Yifan presenting at the BSN Hong Kong Summit.

Credit: BSN Base via [YouTube](#)

Red Date Technology is not particularly well-known, but it has a powerful partner in making He's cyber-utopia a reality: the Chinese government. In 2018, Red Date formed a tech consortium with a collection of state-backed power players — the State Information Center, a think tank under Beijing's macroeconomic planning agency; the state-owned wireless carrier China Mobile; and the state-owned digital payment firm China UnionPay — to build the Blockchain Service Network, or the BSN.¹



The BSN Incubation Center in Hangzhou, China. Credit: [BSN](#)

Billing itself as the next-generation internet infrastructure, the BSN is the world's most ambitious sovereign-backed blockchain project. It has been operational inside China for two years now, hosting some 25,000 developers with more than 2,000 applications — from [paying](#) utility bills to keeping supply chain inventory. In terms of scale, it's as if “Amazon, DARPA [the research and development agency of the Department of Defense], and Visa got together” to build a public technology infrastructure project, says [Jehan Chu](#), founder of [Kenetic](#), a blockchain-focused venture capital firm that participated last June in a \$30 million Series A round in Red Date. (Kenetic has backed many Web3-industry juggernauts, such as [FTX](#), [Solana](#) and Decentraland.)

“ You just look at it and you go, ‘Why the hell hasn’t somebody else done this?’ ”

— *Alan Pelz-Sharpe, founder of Deep Analysis, a tech advisory firm*

In addition to efficiency, [blockchain](#) systems like the BSN promise to deliver a new “public layer” to the web — one more accessible than the “private layer” currently controlled by big tech. Indeed, the internet today lives atop rented land: Google monetizes search data while Amazon hoards the sales information of independent sellers. China is no different. Despite the internet's radical promise of decentralized governance, virtual society remains inextricably bound to the timeworn rituals of private ownership.



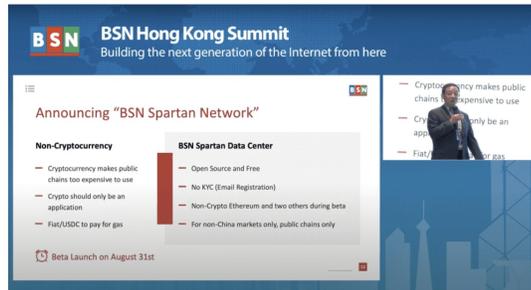
Blockchain networks like the BSN conjure up a new paradigm. The term “Web3,” which was coined by Ethereum co-founder [Gavin Wood](#) in 2014, began as a half-baked blueprint of a decentralized internet powered on blockchains. By enabling transactions to be verified in the absence of a single, supreme entity, distributed ledgers can move the internet away from the

peonage of big tech fiefdoms and into a communal reservoir of self-serving web services.

While there is plenty of interest in the idea in the U.S., the budding decentralized internet remains, as it were, decentralized: the industry is fragmented both operationally and conceptually. Meanwhile, thanks to He, China has been quietly building and advancing the BSN, its singular state-backed answer.

“People say China has nothing to do with Web3, but it just has nothing to do with crypto,” says [Tan Min](#), general secretary of the BSN Development Association, alluding to Beijing’s decision last September to ban cryptocurrencies, blockchain’s renowned financial offspring. “We are the actual Web3.”

And soon, the whole world can see China’s Web3 in action. At the Hong Kong summit, He announced that the BSN’s international version, called the Spartan Network, would go live on August 31. Like the domestic version, the Spartan Network will provide a low-cost, “one-stop shop” for developers to harness blockchain technology for their enterprise needs. The first of its kind, the BSN does not support cryptocurrencies — it utilizes special blockchains in which transaction fees are settled in fiat currencies.



BSN Spartan Network as presented by He Yifan at the BSN Hong Kong Summit.

Credit: BSN Base via [YouTube](#)

According to He, who spoke to *The Wire* from his quarantine hotel in Shenzhen, the blockchain industry is at a tipping point, just like the internet was in the 1990s. The discombobulated network of computers we now call the web only became epochal after American scientists adopted a shared language — the TCP/IP programming protocols. The blockchain revolution requires solving the same “interoperability” problem — the aim of the BSN.

“To be honest, I’m so impressed,” says [Alan Pelz-Sharp](#), the founder of Deep Analysis, a Philadelphia-based technology advisory firm who has [written](#) on the BSN. “You just look at it and you go, ‘Why the hell hasn’t somebody else done this?’”

China is not an obvious champion of decentralized technologies. Last September, when the country banned cryptocurrencies, its private Web3 industry cratered. Paradoxically, however, blockchain itself has received significant traction within central government quarters. In 2019, just months before BSN’s rollout, President Xi Jinping [told](#) members at a Politburo study session to “seize the opportunity” of blockchain technologies. Since then, China has amassed about [60 percent](#) of the world’s blockchain-related patents, according to data compiled by the [World Intellectual Property Organization](#).²



He Yifan speaking at the Web3 conference held in Shanghai, China, 29th October 2020. Credit: BSN via [Twitter](#)

Bolstered by China's far-sighted, state-centric innovation model, the BSN is now part of an emerging suite of government initiatives from batteries to 5G telecommunications that are putting U.S. officials and Silicon Valley on the backfoot. In March, the Biden administration issued an [executive order](#) exploring the development of a U.S.-backed digital currency — apparently a response to

China's promotion of its digital RMB. The BSN, some observers say, is another example of China taking the lead in a critical technology.

“There's no other country that really has a centralized platform that entities can connect into,” says [Zennon Kapron](#), the founder of fintech consultant firm Kapronasia. Kapron contrasts this with the U.S., where private blockchain players such as R3 and Hyperledger are locked in zero-sum competition. “That's one of the upsides of China's political system: they can say, 'Okay, this is the standard, and everybody goes on it.' You don't have a thousand little fires, you have one big fire that everybody contributes to.”

Still, some critics say there needs to be more experimentation and competition to get something as big as a blockchain-enabled internet right. Plus, the Chinese Communist Party's history of internet censorship complicates China's attempt to spearhead a new internet revolution. To assuage those fears, He has registered the Spartan Network with a Singapore foundation and plans to open source the code. He maintains that the Spartan Network has no ties to the Chinese government and that management of it will be led by Red Date, which is headquartered in Hong Kong, and a group of still-undisclosed international firms.

“This is definitely the future,” He told his summit audience. “But the journey will be very challenging, especially for a Chinese project and a small Hong Kong tech startup.”

TECH LOGIC

In his twenties, [He Yifan](#) was a freshly arrived immigrant living in Queens, New York, a computer science major at Stony Brook University, and the chief executive of one of the largest publicly traded Chinese-language portals of the early internet era.

Born in 1976 to a family of well-educated engineers in eastern Shaanxi — the ancestral home of President Xi Jinping — He Yifan grew up in the courtyard of his parents' research institute, mired in intellectual debates. Brash and passionate, he spent a year at Northwestern Polytechnical University in the capital of Xi'an before his parents sent him on a one-way trip to New York.

He arrived with a grasp of English so poor he initially couldn't understand his lectures at Stony Brook. In 1996, he enrolled in an English language school in Queens, where he had his first encounter with the internet.

“At that time, when I communicated with my friends in China, it was with hand-written letters,” he says. “Can you imagine? It was like three weeks to reach them, and then they write back one month later. That was communication.”

On his school's computer, with help from his English teacher, He logged into the internet for the first time. He says he realized at that moment that "this would change everything."

English syntax and vocabulary would haunt him for years, but internet code came to him as if it were his native tongue. A computer science major, he had soon built his first website: an English-language portal on China's dynastic history.

By the late 1990s, with the dot-com boom in full swing, He dropped down to one class a semester in order to devote most of his time to a new website: the eponymous Yifan.com. Like most portals of the day, Yifan.com was a smorgasbord of digital delights — Chinese articles, chat rooms and e-commerce services for books and groceries, mostly aimed at Chinese communities in North America. Its stated mission was "to promote communication among Chinese people from all over the world."



He Yifan's website in 1999.

On a good day, the site attracted more than 300,000 visitors, and, in 2001, Yifan.com listed on the now-defunct Over-the-Counter Bulletin Board (OTCBB), an exchange for stocks trading below a dollar. But after the dot-com bubble burst, He sold his shares and his website fell into disrepair.

In 2002, with a bachelor's degree finally in hand, He went on to do two aimless years at MIT. After having had a front-row seat to the information revolution in the U.S., he sensed that the balance of opportunity was shifting East, so in 2006, He returned to China.

"Chinese people were getting richer by the day," He says, referring to Deng Xiaoping's market reforms. "I thought I had to go and make my own contribution."



He Yifan from Red Date Tech. Credit: Red Date Technology

For the next ten years, he worked diligently as an investor in Beijing, first for a U.S. family office and later a private equity firm managed by He and several partners. But by 2014, he had come to a bleak conclusion: China's investment options were quickly dwindling. The sun had set on the mobile revolution; the real estate sector was overheated; and traditional industries, such as manufacturing, faced liquidity problems. Disillusioned, He took over as the CEO of Beijing Red Date Technology, a startup working with local governments on the infrastructure for China's data-powered [smart cities](#).

The experience, he says, showed him that China has an abundance of physical infrastructure, but the technological infrastructure — the chips, cables and towers that undergird Chinese technologies — are predominantly borrowed. He wants Chinese entrepreneurs to go beyond the ephemeral surface of mobile software tools to build out its “underlying technologies.”

“When I see tech, I always look at the logic behind it. It's not the application, it's the infrastructure,” he told *The Wire*. “For China to create an infrastructure, an underlying technology, and have the whole world use it, that is a huge deal.”

“**...he had this unique ability to see 20 years ahead... It's kind of unique in the industry. He is not following the latest trend or the latest fad; his vision is very well thought out.**”

— *Tim Bailey, Red Date's VP of Global Sales*

By 2018, the Chinese government was thinking the same thing. Around then, the Communist Party began deflating speculative industries such as consumer tech and real estate, while diverting resources to more research-intensive projects like semiconductors. Blockchain epitomizes China's new selective-breeding approach to technology: in the Chinese vision, crypto is not so much a catalyst but a deadweight — shackling the blockchain industry from realizing its potential in industrial revivification.

[Click here to read another cover story by Chang Che, about Zhongguancun, China's Silicon Valley.](#)

He's stint in smart cities had no relation to blockchain, but it gave him inroads with the government and a reputation as a reliable, public-minded technologist. In 2018, the central government used He as an expert consultant to evaluate incoming blockchain-related proposals.

“Before that, like most people, I believed blockchain equaled crypto,” He says. But, one day, after rejecting a slew of proposals, all of which he believed were scams, He came up with a new *modus operandi* for blockchain, one drawn from his early internet years.

“That's the day I figured out the whole thing,” He told *The Wire*. “Blockchain is actually a public IT system, as opposed to all the IT systems today that are locked in the back-end servers of big tech companies.”

He, together with his government partners, launched the BSN in September 2018. In the aftermath, Red Date has attracted a global suite of investors — including Chu's Kenetic Capital, [Saudi Aramco](#), Bangkok Bank, and the Swiss financial giant [Pictet Group](#) — as well as global talent. [Tim Bailey](#), a longtime Intel executive in Asia, joined Red Date last March

as vice president of global sales.

“I was drawn to [He] because he had this unique ability to see 20 years ahead,” Bailey says. “It’s kind of unique in the industry. He is not following the latest trend or the latest fad; his vision is very well thought out.”

HOW DOES YOUR GARDEN GROW?

If U.S. officials are leery of TikTok, the popular Chinese-made social media app, then they will certainly balk at a Chinese-made infrastructure.

Last year, [Yaya Fanusic](#), a former CIA analyst and now a scholar at the Washington-based think tank Center for a New American Security, [testified](#) to a U.S. Congressional panel that the aim of the BSN was to give China “strategic global leverage.” Fanusic, who has studied the BSN for the past few years, told *The Wire* that China’s approach to blockchain is right, in terms of solving the interoperability problem, but he remains skeptical of the Spartan Network.

“The Chinese government aims for the BSN to give China **strategic global leverage**. The BSN is building infrastructure through 131 data centers located on every continent except Antarctica.

A quote from Yaya Fanusic’s [testimony](#).

“Based on how they have framed the BSN in general,” he says, “I would still be a little wary of this idea that the Chinese government would have no influence over access, even to the international version.”

According to Tan, BSN’s general secretary, China will have no control over the Spartan Network. At a certain point, she says, China would be just a blip in the BSN story: “It’s just like the internet. Who owns the internet? Everybody.”

Although the U.S. does not own the internet, its centrality to the internet’s development paved the way for American companies to lead and influence the information revolution. An easy-to-use blockchain layer could introduce those same benefits to China, says Pelz-Sharpe, at Deep Analysis.

“Give the BSN 10 years and a good wind,” he says. “We’re going to be left way behind.”



Jehan Chu, speaking at the 2021 BSN Conference. Credit: BSN Base via [YouTube](#)

Chu, of Kenetic, has [said](#) that the Spartan Network will be “particularly suited for the developing world,” including countries in Southeast Asia, Africa and South America. For starters, fears of Chinese surveillance are less of an obstacle in export-driven countries, especially after the [Snowden](#) revelations [demonstrated](#) that U.S.-led internet infrastructure can be equally susceptible to surveillance. Also, the BSN is considerably

cheaper than many U.S. blockchain services, such as offerings from IBM and Amazon Web Services (AWS), which are known as blockchain-as-a-service (BAAS).

According to observers, while blockchain projects in the U.S. have raised hundreds of millions of dollars in the past few years, many have failed to scale and become interoperable. The industry is market-driven and vibrant, but splintered, prompting [Gary Gensler](#), the chairman of the Securities and Exchange Commission, to dub it the “[Wild West](#).”

The BSN’s unique advantage, by contrast, is that it is not so much a blockchain, but a single, standardized workshop for all future blockchain developers. And China has consolidated resources behind it.

“They’ve essentially given [Red Date] close to a monopoly through government decrees.”

— *Graham Webster, editor-in-chief of the DigiChina Project*

“China, in some areas, is much much more efficient than the U.S.,” says He. “China Mobile could immediately provide 100 different data centers across China for us to test the [BSN] network. Which big carrier or cloud service provider could do that in the U.S. without charging us?”

While this approach might be efficient for BSN, [Graham Webster](#), editor-in-chief of Stanford’s DigiChina Project, points out that it might come at a greater cost.

“They’ve essentially given [Red Date] close to a monopoly through government decrees,” Webster says. “That seems pretty suboptimal if you’re trying to come up with useful applications for technologies that are brand new. What are the chances that this one assemblage of institutions gets it right instead of, say, a massive garden of people trying out things and failing and succeeding?”

Bulldozing the garden to bet on one seedling is decidedly not the American way, still many experts say there is room for more state-involvement — such as the decades-long U.S. military investment in network infrastructure that spawned the internet. Ironically, it was in reaction to another global power — the USSR and its launch of Sputnik — that pushed the U.S. government, in 1966, to create ARPANET, the network of computers that preceded the internet.

So far, the U.S. House of Representatives has passed Blockchain Innovation Act, which now moves to the Senate, but the legislation only sets out a research framework for blockchain technology. Fanusie says organizations like the National Science Foundation (NSF) should fund a nationwide, university-led “sandbox,” to help academics build an American BSN. Software developers, he told *The Wire*, are hungry for a public-service-oriented approach to blockchain, free from the incentives of Silicon Valley VCs and tech startups.

Developers “love the analogy of [building] the internet,” Fanusie says. “But they’re all in these companies that have these very short term horizons, developing specific projects and services.”

Indeed, based on interviews with Stanford faculty, [Mikk Raud](#), a recent graduate of a cybersecurity policy program at Stanford University who has studied the BSN, found that software startups were siphoning talent away from long term infrastructure projects, which are often more time-intensive and lack immediate payoffs.

“At Stanford, it’s typical to create a startup, put ‘AI’ into the name, and get a couple million pretty easily from the VCs,” says Raud. “But 30 or 40 years ago, the focus was on hardware and semiconductors, which is still at the core of any kind of technology.”

Although China’s pivot to core technologies is only a few years old, He says it’s a good time to be back in his home country. In the U.S., as the young CEO of Yifan.com, He had been



Darren Soto, a representative for Florida, sponsored H.R. 3639, the Blockchain Innovation Act. Credit: Adam Fagen via [Flickr](#)

humbled by his early internet experience. “Had I run that company with what I know now, it would have been a NetEase or Sohu,” he says. Now, wizened and better-connected, He has found a more ambitious, friction-free backer in the Chinese government.

“They see the future,” he says. “They understood what I was talking about. For that, I’m really, really grateful.”



Chang Che is a non-fiction writer covering Chinese politics and society. His writing has appeared in *The New Yorker*, *The Washington Post*, *The Atlantic*, and others. He is also an editor at SupChina. [@Changxche](#)

● COVER STORY



Pole Position

BY EYCK FREYMAN

In public, Chinese diplomats and climate negotiators deny that they see any link between climate change and geopolitics. But there is a deeply cynical consensus within China’s academic and policy communities that climate change creates geopolitical opportunities that China can exploit — and must exploit before its rivals do. Greenland was the proof of concept for this strategy. And it caught the U.S. flat-footed.

● THE BIG PICTURE



Transsion's Triumph

BY GARRETT O'BRIEN

A look at Transsion’s monumental growth, unique marketing strategies and future growth potential.

● Q & A



Jörg Wuttke on China's Self-Destruction

BY ANDREW PEAPLE

The EU Chamber of Commerce in China president talks about China’s self-inflicted problems; how he gets away with being so outspoken; and why he believes in China’s comeback gene.



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