



Digital Citizens Wanted

Japan village grows population
with NFTs, Web3 tools

Neo-Yamakoshi Village

Typical images of rural Japan include terraced rice fields, backdrops of snow-dusted mountains, and increasingly lots and lots of old people. That last characteristic is the one worrying Tokyo as depopulation threatens to turn once idyllic towns and villages into ghost communities.

Japan's government has thrown buckets of money at this problem, mostly to try and reverse a collapsing birth rate, all with little success. The centuries-old region of Yamakoshi nestled in the Niigata mountains may not have an immediate solution to fewer babies, but it is taking a novel approach to survival and it involves the most modern of Web3 technologies.

If their strategy works, and expands to other villages, we estimate that rural Japan could look to fund-raise sums in the region of half a billion dollars, while also test-driving a new wave of social tech with global appeal.

The Neo-Yamakoshi Village project, led by Niigata residents, is minting NFTs (non-fungible tokens) that can be bought and sold on digital marketplaces across the world. Furthermore, it's embracing social governance in the form of DAOs (decentralized autonomous organizations). And to top it off, Yamakoshi has ventured into the metaverse as a potential way to repopulate its village with new citizens, albeit digital ones.

This initiative fits neatly into the wheelhouse of the DX (digital transformation) policy of Prime Minister Kishida Fumio to revitalize the nation's economy.

Still, the challenges are immense. Yamakoshi village had a population of 2,200 people as recently as 2004. But an earthquake that year forced local residents to evacuate. When it was deemed safe to return, only half chose to. The local population is now just 740 and the village has been incorporated into nearby Nagaoka City.

It's a story heard across rural Japan. The challenges of life in the countryside, including harsh winters and natural disasters, make modern city life increasingly attractive. The youth flee, leaving behind the elderly and communities with a dimming future.

The Neo-Yamakoshi Village's response to this is to focus on the global appeal of traditional Japanese culture and then digitize it to open access to anyone on the planet with an internet connection. This includes NFTs to raise funds and a digital co-operative that netizens can join and play a role in local decision making.

One of the cultural levers for Yamakoshi is that it's the birthplace of the world famous Nishikigoji breed of koi carp, an obvious image for an NFT.

This report, the latest in the GxxD series from Yuri Group, takes a close look at the Neo-Yamakoshi Village project as a response to depopulation and as a business proposition incorporating digital strategies championed by the government.

The project ticks a lot of boxes in the new ideas department, not least as a real-life test case of whether physical and digital humans can actually 'live' together and help solve very local problems. The idea seems sound, but will it work?



WE AIM TO MAXIMIZE THE VALUE OF THIS SMALL JAPANESE VILLAGE, AND TO MAKE THE MOST OF IT. THAT WAY, PEOPLE ALL OVER THE WORLD CAN BECOME VILLAGERS AND FEEL INVOLVED, EVEN FROM A DISTANCE.

Neo-Yamakoshi Village Founder, TAKEUCHI Haruka

At the forefront of the Kishida administration's digital policy is the use of Web3 technologies to deal with socioeconomic problems, including rural depopulation. But Web3 as a concept is hard to pin down and define, and that goes for many in the government promoting it, let alone those in the aging rural communities it is meant to help.

So what exactly is Web3? It refers to the next generation of the internet, perhaps better understood by looking at what preceded it.

Web What?

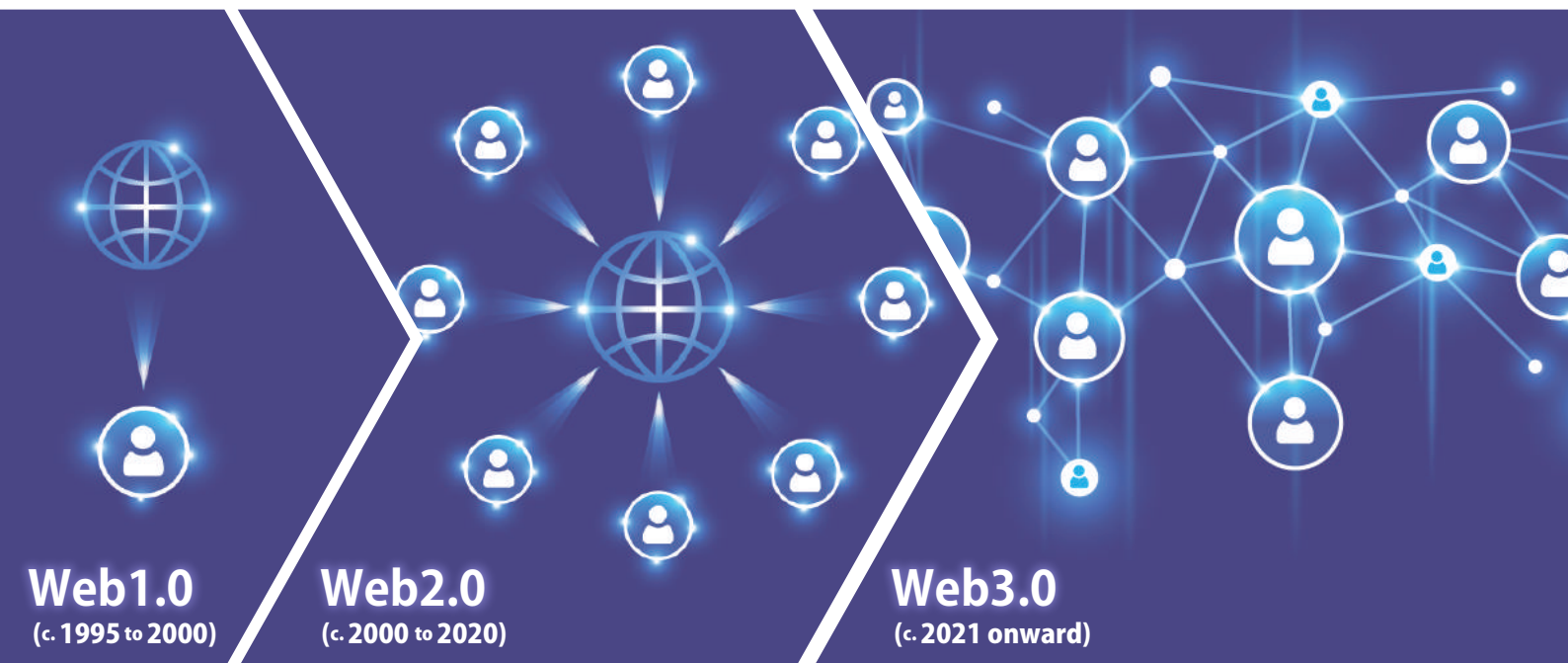
The first generation, or Web 1.0, defines the earliest days of the world wide web, which functioned as a way to search for and receive information in the form of static web pages. The information was openly available, its transmission free, and it was beyond the control of a centralized entity.

Web 2.0 introduced interactive elements, paywalls and applications operated by centralized corporations. These include many of the online tools that the majority of us rely on today: search engines (Google and Yahoo), social media platforms (Meta (Facebook), Instagram and TikTok) and e-commerce behemoths like Amazon and the Chinese equivalent Alibaba.

The entities operating these services are some of the world's largest and most dominant companies – and run by billionaires who have harvested personal data to build their fortunes. That's now part of the problem for many who saw the Internet as an egalitarian ideal, and Web 3.0 is the response.

This is a new decentralized Internet built around blockchain technologies, digital assets like cryptocurrencies and NFTs, and the metaverse. In short, an attempt to wrest back control of the Internet from the all powerful mega-corporations that currently serve as its gatekeepers.

Generations of the Internet



In Japan, the U.S. internet giants of Web 2.0 are referred to as GAFAM (Google, Apple, Facebook, Amazon, and Microsoft). Japanese business and government circles are worried that the nation's own Web 2.0 firms are so far behind GAFAM – as well as China competitors such as WeChat and Alibaba – that Japan is losing the ability to compete internationally.

Kishida's Web3 Gambit

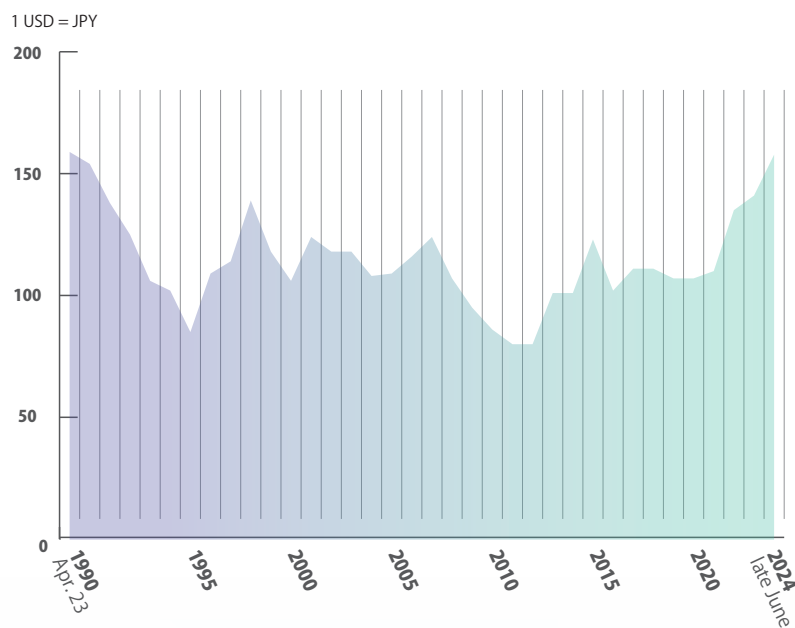
The Nikkei reports that domestic companies provide just 30% of Japan's cloud services. In 2023, the digital-related balance of payments deficit was \$35 billion, a 16% increase on the year before and twice the level of five years ago.

The government addressed the spiraling issue in its updated Priority Policy Program for Realizing Digital Society, which it released on June 21.

This sense of losing the plot is exacerbated by the Japanese yen falling to more than 30-year lows against the U.S. dollar. While a weaker yen can make Japan's exports cheaper, it also serves to feed inflation at home as the cost of imports surge.

So if the future is digital, what to do? For the Liberal Democratic Party, which was founded in 1955 and has pretty much run Japan since, Web3 holds some answers.

Japanese yen at 3.5 decade low to USD



While the LDP, to which Prime Minister Kishida belongs, is a conservative political group hardly known for its revolutionary thinking, it is throwing its weight behind Web3. In 2022, the Kishida administration established a dedicated Web3 Project Team that has since released a series of white papers – the latest update in April 2024 – to outline the importance of Web3 to Japan.

IN THE WEB 3.0 ERA, THE DIGITAL ECONOMY IS EXPECTED TO SHIFT TOWARDS A MORE DECENTRALIZED NETWORK BASED ON BLOCKCHAIN TECHNOLOGIES SUCH AS NFTS AND CRYPTO ASSETS, WHERE INDEPENDENT USERS ARE DIRECTLY CONNECTED TO EACH OTHER WITHOUT BEING DEPENDENT ON A SPECIFIC PLATFORM.

Liberal Democratic Party, 'NFT White Paper,' 2022

Meet Society 5.0

The Kishida administration also sees Web3 as a means to achieve what the government dubs “Society 5.0.” This is a long term policy framework for a so-called “super smart society” first drawn up during the second Abe administration (2012-19). It’s a plan to build a more sustainable, advanced society and economy by marrying together technologies such as artificial intelligence, Internet of Things, and Big Data among others.



Source: Cabinet Office of Japan; updated design by Yuri Group

The Society 5.0 concept dovetails with the ideas underpinning Web3. Namely, decentralization, independence and self-sufficiency.

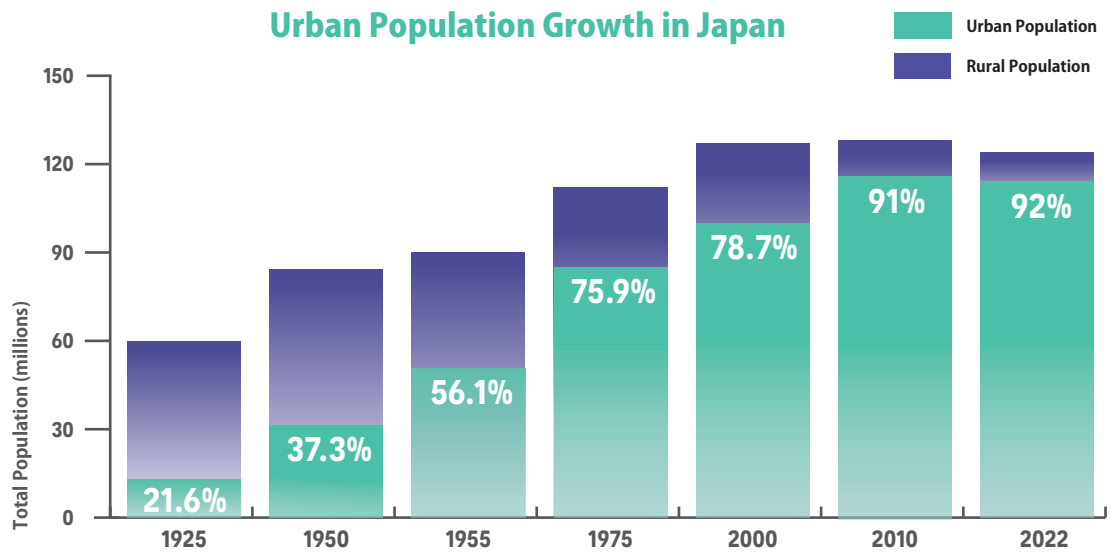
This all sounds utopian – having entities such as DAOs replacing centralized top-down leadership whether corporate or political – but, in some ways, it is mirroring recent governance trends. Japan’s national government sets out the overarching direction but is moving more toward delegating regional administrative functions to municipal or prefectural-level authorities.

The theory goes that Web3 technologies and Society 5.0 could be a way for towns and villages like Yamakoshi scattered throughout rural Japan to take more control of their own destinies and equally reap more of the benefits.

Hence, the LDP is offering startup capital financing to independent collectives, like the 10 million yen provided to the Neo-Yamakoshi Village project to experiment with and use Web3 tools.

The promoters of these projects point out that Apple Computer started off in a garage and dropouts founded other technology giants. So, as Web3 and Society 5.0 merge, who knows what could be born out of small experiments in rural Japan?

Death of the Village



Source: National Institute of Population and Social Security Research + The World Bank

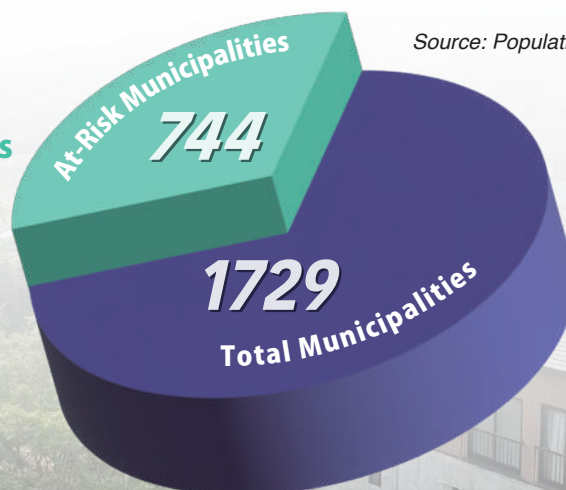
Traditional Japanese life once revolved around the village. 100 years ago, 80% of the total population lived in the countryside. By 1950, five years after the end of the Pacific War, that figure still stood at around 63%. That began to change dramatically from the mid-1950s as the country entered the so-called “economic miracle” period.

Rural populations flocked to the major cities – Tokyo, Osaka, Nagoya – and Japan went from a largely agrarian society to nationwide industrialization over the course of a few decades. The percentage of the population living in rural communities plunged and eventually plateaued in the 2010s at around 8%.

The effect is the slow death of the village. Japan’s population as a whole is rapidly declining and is expected to fall by around half to 63 million people by 2100. But the dropoff is particularly pronounced in rural areas.

A report released in April by the Population Strategy Council assessed how many of Japan’s 1,729 municipalities are likely to experience a 50% reduction in the number of childbearing age women (defined as 20-39 years old) between 2020 and 2050. According to this metric, an alarming 40% of Japan’s municipalities are at risk of vanishing as a result of population decline.

Disappearing Towns



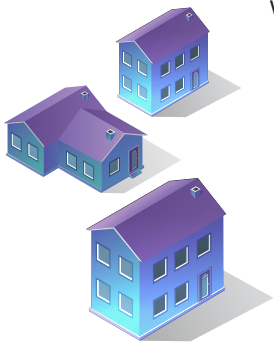
Source: Population Strategy Council

Village Strife

Yamakoshi is perched high up in the Niigata mountains. It's an isolated, hard-to-reach part of the country that offers picturesque views in summer of koi carp ponds and terraced rice paddies, but is blanketed under 2 meters of snow in the long winter months.

Like other settlements in rural Niigata, the Chuetsu earthquake in 2004 was a wakeup call to the depopulation problem. Neo-Yamakoshi Village founder Takeuchi Haruka first arrived in Yamakoshi as part of the post-disaster recovery effort.

She says she quickly developed an affinity with the way of life in the area, but at the same time realized the extent of the demographic issues facing the local community. It was a desire to find solutions that led her to experiment with Web3 tools.



14

No. of settlements



367

No. of households



740

Permanent residents

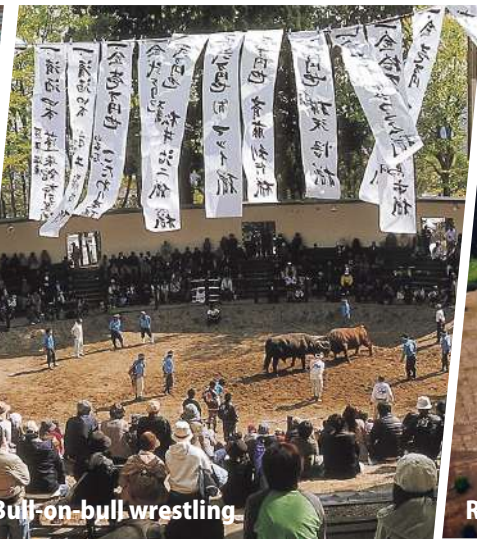


56.2%

Elderly population (over 65)



Koi carp raising



Bull-on-bull wrestling



Rice farming

NO MATTER HOW SMALL A VILLAGE IT IS, THE CULTURE CULTIVATED BY THE REGION IS EXTREMELY VALUABLE. I WANT PEOPLE THE WORLD OVER TO RECOGNIZE THIS VALUE, AS I THINK IT'S IMPORTANT FOR THE FUTURE OF JAPAN AS A WHOLE THAT IT PRESERVES THE CULTURE AND SPIRIT IT HAS NURTURED.

Neo-Yamakoshi Village Founder, TAKEUCHI Haruka



Nishikigoi NFT

NFTs ARE CONSIDERED TO BE THE CATALYST THAT WILL POWERFULLY EXPAND THE DIGITAL ECONOMY IN THE WEB 3.0 ERA. NFTS...HAVE MADE IT POSSIBLE TO ADD RARITY TO DIGITAL ASSETS AND DRAMATICALLY INCREASE THEIR ECONOMIC VALUE.

Liberal Democratic Party, 'NFT White Paper,' 2022

Artist: raf



Artist: ykxotkx

In formulating its Web3 strategy, the government has both promoted and consulted Neo-Yamakoshi Village as a project that utilizes the digital asset toolkit to help address socio-economic issues affecting Japan. The fundamental element underpinning the project is the Nishikigoi NFT.

As a non-fungible token, NFTs are unique digital identification codes recorded on the blockchain, an immutable digital ledger maintained by a global, decentralized network of verifiers. As an immutable piece of code, NFTs cannot be replicated or copied. In their most essential form, NFTs are therefore an effective form of verification and certification.

Reliability as a form of proof of ownership is particularly prized by collectors. This popularity prompted the explosion of the NFT "art" market in 2021, with some of the so-called Bored Apes series of NFTs trading hands for millions of dollars. The subsequent NFT market bubble and its rapid collapse contributed to the broader cryptocurrency market losing around two-thirds of its \$3 trillion market capitalization in what was known in crypto-speak as the "winter" of 2022. The market is now valued at around \$2.4 trillion.

Neo-Yamakoshi Village created their Nishikigoi NFT series to leverage the region's own uniquely saleable cultural asset – its claim to being the birthplace of Nishikigoi, Japan's most recognized breed of brightly colored koi carp.

Artist: Okazz



Since its inception in 2021, the Nishikigoi art series has generated over \$400,000, which the creators have used for community projects. That includes a sports day for local school children attended by both physical and the "digital" residents who traveled there for the event.

1 ETH = \$3,500 Ether (ETH) is the cryptocurrency on the Ethereum blockchain used to buy NFTs

120 ETH = \$423,000 Total sales of Nishikigoi NFTs

Yamakoshi DAO

The Nishikigoi NFT also serves as a tool for administrative purposes. It acts as a form of identification for the “digital citizens” of Yamakoshi, a proof of membership in the village’s “phygital” community, and a governance token for use in voting processes administered by the project’s in-house Decentralized Autonomous Organization or DAO.

Nishikigoi NFT uses

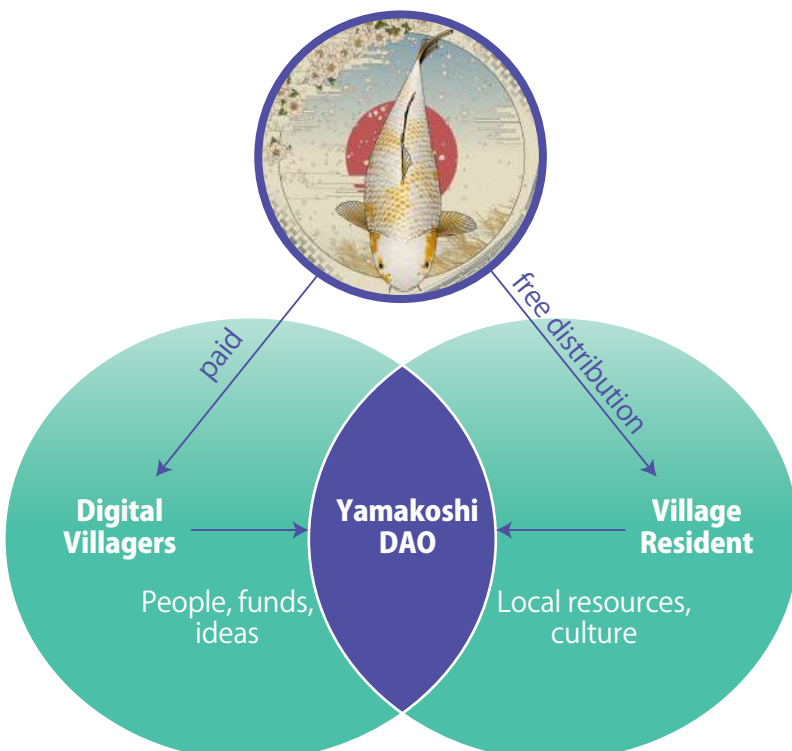


DAOs, as the name suggests, are a form of digital organization designed to be both decentralized and autonomous. DAOs are governed by a flat organizational hierarchy to replace top-down structures that usually come with an all-powerful authority figure, such as a CEO, at its center.

Anyone in possession of a governance token – in the case of the Yamakoshi DAO a Nishikigoi NFT – can cast a vote and have a say in the operation of the DAO. One token equals one vote and anyone, anywhere in the world can participate.

So far, the Yamakoshi DAO has held 6 rounds of voting using this method, including the decision to allocate Nishikigoi NFTs as governance tokens to physical villagers free of charge. Founder Takeuchi says that the average participation rate is only around 40% (voter turnout for Japan’s most recent general election was 56%). She said she hopes this will improve to 60-80% in future votes.

Nishikigoi NFT



The idea driving the Yamakoshi DAO is that by granting access to village life and voting rights on matters of community relevance, the project can build a sense of affinity with the village among digital residents far beyond the mountain ranges of Niigata Prefecture.

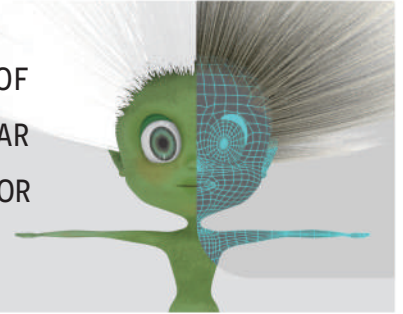
Digital residents purchase NFTs to help in preserving a unique way of life and local physical residents receive much needed funding and outside expertise.

SO FAR, THE PROJECT HAS ADDED 1,700 “DIGITAL RESIDENTS” TO THE POPULATION OF YAMAKOSHI, WITH THE MANAGEMENT TEAM HOPING TO GROW THAT NUMBER TO 10,000.

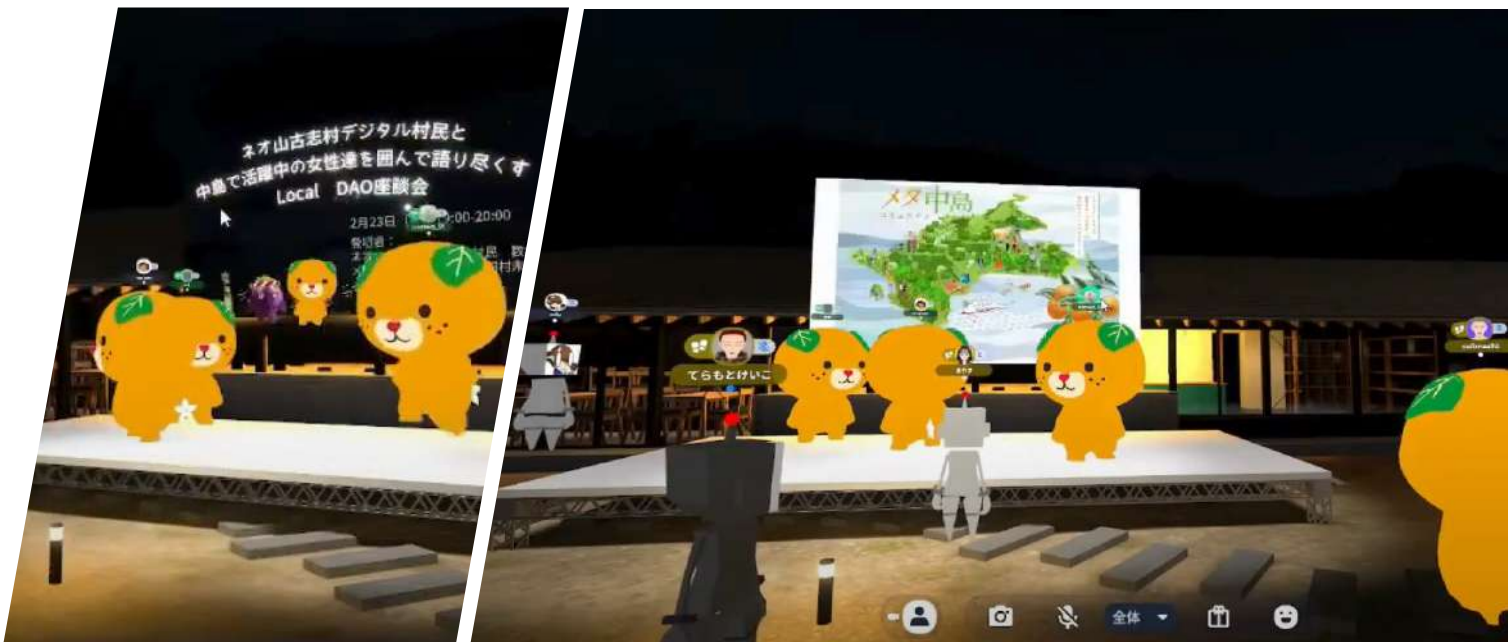
Another instrument in the Web3 toolkit is the metaverse. The technology offers immersive experiences using VR (virtual reality). Users select a digital persona, or avatar, to represent their presence online.

Global Town Hall

THIS COULD BE A VIRTUAL REPRESENTATION OF THEIR OWN IMAGE, A CHARACTER FROM POPULAR CULTURE (OFTEN ANIME FOR JAPANESE USERS), OR A CHARACTER OF THE USERS' OWN DESIGN.



These avatars enter the metaverse, which functions as a forum and an online event space for communications. The space is personalizable according to the nature of the forum and the goals of the organizers.



In the case of the Neo-Yamakoshi Village, the management team uses the metaverse to hold town hall meetings. This enables both physical residents and “digital residents” from all over the world to gather in one virtual space – which itself is styled on the Yamakoshi region – increasing the sense of participation in village life.

THE DIFFICULTY IS THAT WE DON'T SHOW OUR FACES, DON'T REVEAL OUR REAL NAMES, AND USE NICKNAMES, SO SOMETIMES IT'S HARD TO COMMUNICATE. BUT THE ADVANTAGE OF HAVING MEETINGS THROUGH THE METAVERSE IS THAT NO MATTER WHERE YOU LIVE, WHETHER IT'S HERE IN YAMAKOSHI OR AMERICA, YOU CAN SHARE THE SAME ISSUES AT THE SAME TIME, DESPITE THE PHYSICAL DISTANCE.

Neo-Yamakoshi Village Founder, TAKEUCHI Haruka

Advocates say Web3 harnessed correctly offers opportunities to address social and economic problems, such as those facing Yamakoshi, and in turn help Japan into a more tech savvy and prosperous future.

But to grasp the uses and implications of Web3 requires a reset and education for the uninitiated to which much of the technology-speak seems like so-much digital hot air around confusing acronyms.

Takeuchi said in an interview that the project has had its fair share of problems with how to explain the benefits of the technology to elderly Yamakoshi residents the project is meant to serve. She said that the DAO voting process has proved difficult to demonstrate, perhaps helping to explain the low voter turnout. For a project that aims to incorporate digital citizens from overseas, the language barrier is also a stumbling block, though AI is rapidly offering solutions to that.

Implications

Other issues include how should the DAO weigh the votes of actual Yamakoshi residents against their digital equivalents? Are there decisions that NFT governance token holders should be excluded from voting on? Is there a point when local residents revolt against giving voting rights to so-called “digital residents” who they’ve never met?

But the financial benefits are real. The sale of Yamakoshi NFTs so far has generated \$423,000, which is equivalent to an additional \$1,252 for each of the 367 Yamakoshi households – nothing to be sniffed at in a rural village where a little extra cash can go a long way.

Yamakoshi has its specific cultural assets, but so do scores of villages and towns in rural Japan that developed over centuries.

BASED ON THE YAMAKOSHI MODEL, IF THE 744 MUNICIPALITIES AT RISK OF DISAPPEARING WERE TO ADOPT SIMILAR WEB3 INITIATIVES AND WIN STARTUP FUNDING FROM THE GOVERNMENT, IT COULD GENERATE SOMETHING IN THE REGION OF \$300 MILLION TO \$500 MILLION FOR THOSE RURAL COMMUNITIES, ACCORDING TO YURI GROUP ESTIMATES.

Of course, Yamakoshi’s additional cultural capital is the presence of Takeuchi and her team, who are tech-savvy enough to pull together a project of this kind. Other regions would also need a similar level of digital expertise and manpower, something that Japan currently lacks – as noted in the first report in the GxxD series.

Still, the Yamakoshi project does offer up intriguing possibilities and not just for Japan, of course. Could the latest in Web3 technology preserve centuries of cultural traditions and help knit communities together in towns and villages facing similar challenges across the world? Could this be the creation of a cultural economic marketplace that attracts collectors or patrons, much like the NFT boom did albeit briefly in the early part of this decade?

Japan was one of the first nations to gain global ‘fame’ for falling birth rates, becoming almost an international media byword for shrinking societies. As many developed nations now follow in Japan’s demographic footsteps, the nation also has the chance to pioneer the solutions. What seems like a utopian ideal today, could emerge as the global consensus to evolve our social and economic realities tomorrow.



The GxxD reports series covers the megatrends, business models, and innovations at the crossover between digital and clean energy. With stories on areas as diverse as AI, the CO2 economy, robotics, and fusion, we share intelligence that anyone with an eye on Japan will want to explore further.

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nearer by not keeping still

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Interested in becoming a digital citizen?

To contribute to the Neo-Yamakoshi Village project, you can purchase your own Nishikigoi NFT (the first step toward digital citizenship!) here:

 <https://nishikigoift.com> 

