People Commuting into Online Games

Survival Strategies in the Age of AI and the Future of the Metaverse

About

Metanomia is a think tank focused on analyzing transformations in the cryptocurrency market and related technologies.

Researcher

Hyemin Son
Minguk Seok
Daehan Seok

Corresponding Author

Taemin Oh

Contents

01

Introduction

Instead of opening the front door, they sit at their desk and open their laptop. Instead of pressing elevator buttons, they click the login button; instead of passing through security gates, they navigate login screens. This is a commute for survival—one in which humanity has begun commuting into games.

We stand at the intersection of two massive curves. On one side, the Great Replacement is underway. Automation and artificial intelligence (AI) are rapidly erasing human jobs through warehouse robots, autonomous vehicles, and generative AI. On the other side, the Great Migration begins. Games, platforms, and the metaverse are no longer mere spaces for leisure; they are becoming the foundation of virtual economies where income, assets, and sometimes even survival itself are at stake.

These shifts have manifested repeatedly throughout history. When economies falter, people lose their livelihoods and relocate in search of new opportunities for survival. Just as farmers displaced by industrialization were pushed into factory districts and transformed into urban laborers, labor has always been redistributed toward where capital and opportunity flow. The "item farms[1)]" that shook Korea's online gaming market, and the surge of labor in virtual worlds during the COVID-19 pandemic, emerged from this same trajectory. These were decisive signals of where human movement turns when physical workplaces shrink—and how labor is reinvented within the uncharted territory of the virtual world.

This article aims to peel back the veneer of terms such as "P2E (Play-to-Earn)" and "X2E[2)]", which have become marketing buzzwords, and to confront them instead as a social phenomenon of digital labor. Its goal is to dissect these early signals of future labor and to articulate what is required for those displaced from the physical economy during the AI transition to establish sustainable foundations within virtual economies.

To this end, we first examine the moment digital labor emerges through the cases of the online games Lineage in Korea and RuneScape in Venezuela. We then analyze the structural contradictions of mining-type games and the "nomad versus settler" dynamic through the rise and fall of Axie Infinity. Next, by broadening our perspective, we explore how populations displaced during the AI transition may diversify into various forms of digital labor. Finally, drawing on the economic model of Roblox and the meme token BONK within the Solana ecosystem, we investigate the conditions for X2E 2.0—a model capable of transforming nomads into settlers.

1)

Item farms refer to organized operations that mobilize multiple accounts and workers to mass-produce in-game assets—so-called "farming"—and generate profits by trading them for real-world money. Characterized by repetitive labor and a specialized division of work, they are often cited as early examples of virtual spaces transforming from playgrounds into workplaces.

2)

X2E is an abbreviation for "X-to-Earn," or "Something-to-Earn," a term that collectively refers to models such as Step-to-Earn, Move-to-Earn, and Learn-to-Earn, in which performing a specific activity (X) earns rewards like tokens or points.

02

A Glimpse of the Future Revealed by Lineage and Subsistence Gaming

Digital Feudalism and Primitive Mining

In 1998, South Korea was engulfed by the shockwaves of the IMF foreign exchange crisis. Companies collapsed, and countless breadwinners were pushed out of the labor market. At the time, Korea's minimum wage hovered at little more than one dollar per hour.[1] Against this backdrop, an online game emerged with a seemingly absurd price tag of twenty dollars per month[2]: NCSoft's Lineage.

Given the high cost of internet access and the desperation of the economic climate, the game's success appeared highly unlikely. Yet Lineage became both an escape from reality and a new field of opportunity for the unemployed and for young men drifting between PC bangs—Korean internet gaming cafés. This virtual land attracted both those rich in time and those wielding purchasing power. Before long, an economic system that closely mirrored the real world began to take shape.

The core structure of Lineage can be described as a form of digital feudalism. When a Blood Alliance captures a castle through siege warfare, the ruling lord gains the authority to set tax rates within that territory. A portion of the currency spent by players buying and selling consumables—such as potions—in castle shops is collected as tax revenue. Siege warfare, therefore, is not merely a contest of honor, but a fierce struggle for control over the flow of in-game currency (Adena) circulating within the territory.

The ruler who claims a castle effectively becomes the head of a local government, using vast tax revenues to recruit clan members and expand political and military power. Ordinary players, in turn, become taxpayers who sustain this system through everyday consumption. Lineage thus reproduces one of the harshest formulas of real-world politics and capitalism: power grants the right to allocate resources.

In this fierce power struggle, the value of in-game items symbolizing strength skyrocketed. From early high-enhancement weapons to the Executioner Sword, which later emerged as the pinnacle of Lineage's economy, rare items were far more than mere pixels. Crafting the Executioner Sword required tens of thousands of repeated hunts over several months. Moreover, the success rate of enhancement plummeted with each higher level, while the risk of item

destruction upon failure further inflated the value of highly enhanced swords to extreme levels.[3] Supply was tightly constrained, while demand from those craving absolute power exploded. As a result, the saying "A highly enhanced Executioner Sword costs as much as a house" became an accepted fact. The Executioner Sword even earned the nickname "house-selling sword," meaning a weapon so expensive that one might have to sell a house to acquire it. This served as a signal flare, announcing that labor and time invested in the virtual world had begun to convert into real-world monetary value.

The fundamental question—"Why are game items so expensive?"—became a luxury. In its place emerged a more urgent concern: "How much of my real-world debt could I pay off if I sold this sword right now?" This peculiar economy, born from the unique conditions of the IMF economic crisis, was an unprecedented real-time social experiment.

Lineage lays bare how power and capital operate through scarce resources when capital-rich players and time-rich workers meet within a virtual nation. The prototype of what we now call Play-to-Earn (P2E) is already present here. Decades before grand technological terms such as blockchain or token economies entered popular discourse, Korean gamers were already commuting to work through games. The era of subsistence gaming had dawned.

[Figure 1] **Lineage Event Screen Illustrating Real-World Asset Equivalence**
A car (KIA sedan), 12 ounces of gold, and an in-game item (the Executioner Sword) are presented as prizes of equal status, demonstrating the game's convergence of virtual and physical value.
Source: News1 report (item trading site event page)

"I Made It, but It Wasn't Mine"

The era of mass subsistence gaming had dawned, but this primitive P2E model carried a fundamental flaw. Even if a player hunted all night and devoted months to crafting an Executioner Sword, the result was not legally theirs to keep. Under the terms of service, ultimate ownership of characters and items belonged to the company, NCSoft; users were granted only the right to access and use the service. This meant that even if someone possessed items worth hundreds of thousands of dollars, those assets could vanish without a trace the moment the service shut down or an account was suspended for violating operating policies. People were clearly creating value within the virtual world, yet its economy was expanding without any legal protection or functional equivalent of a property deed.

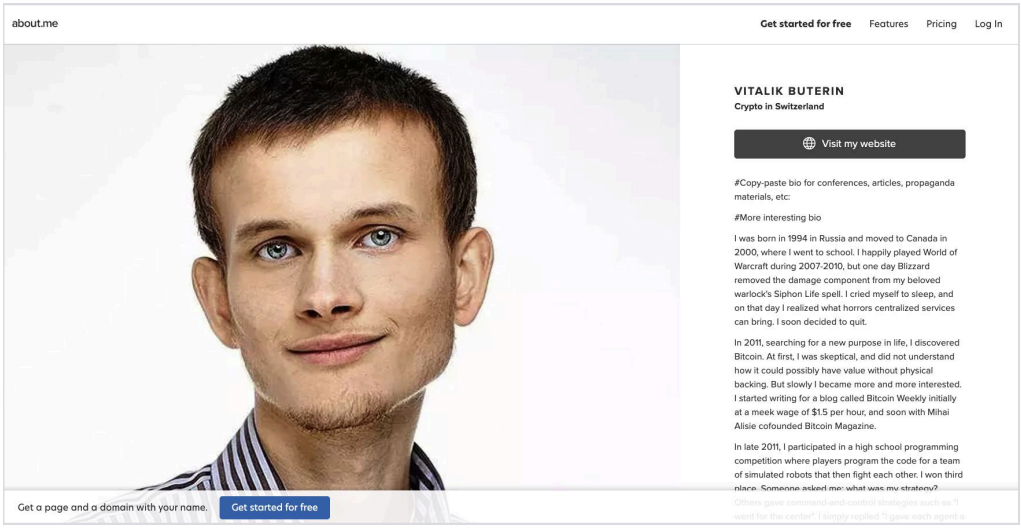
The figure who most vividly experienced the contradictions of this fragile structure—and who ultimately changed the course of history—was none other than Ethereum's founder, Vitalik Buterin. Before becoming known worldwide as

3)

MMORPG stands for 'Massively Multiplayer Online Role-Playing Game'. It refers to a genre where thousands of players simultaneously connect to a single virtual world via the internet, developing their own characters and collaborating or competing with others.

a brilliant programmer, he was a teenager deeply immersed in Blizzard's MMORPG3), World of Warcraft (WoW). He meticulously studied his skill tree and developed his character with care. Then, one day, Blizzard nerfed the skill he valued most: Siphon Life. Vitalik later recalled the shock of that moment:
"I cried myself to sleep that night. And I realized with bone-deep clarity how terrifying the power wielded by centralized services could be."IV
He saw through the core problem. In digital worlds, no matter how much value users build, a structural anxiety remains: if the centralized authority controlling that world changes the rules, that value can collapse at any moment. This is a form of digital totalitarianism.

This anxiety and fear are not problems unique to games. When viewed at a macro level, they reveal a fundamental contradiction embedded in the development of the internet itself—one that defines the era of Web 2.0 in which we live. If the early internet, Web 1.0, was an era of reading—one in which users consumed information unilaterally—Web 2.0 marked a revolution of writing, enabling users to participate directly and produce content. We write blog posts, upload videos to YouTube, and generate vast amounts of data. Platforms grant us the freedom to participate, thereby enriching the internet. Yet a fatal trap lies within this model. While users gained the right to write—to create—they did not gain ownership of what they produced. The rights to this data—memories posted on Instagram, creative works uploaded to YouTube, and even the time invested in World of Warcraft—remain firmly in the hands of platform companies.



[Figure 2] **Vitalik Buterin Reflecting on the World of Warcraft Incident**
Buterin describes realizing the dangers of centralized services on his personal profile page (about.me), an experience that ultimately inspired his development of Ethereum.
Source: Screenshot of Vitalik Buterin's about.me profile

Blockchain: Elevating "Smuggling" to "Trade"

At its core, blockchain is a distributed ledger. Rather than storing records in a company's private database, it maintains a transparent ledger shared across tens of thousands of computers, or nodes, around the world. One form of asset recorded on this vast public ledger is the NFT (non-fungible token). Until

recently, digital files could be replicated endlessly, rendering the very notion of an “original” ambiguous. Blockchain technology resolves this problem by assigning a unique identifier to each asset, transforming it into a singular, verifiable digital object. In effect, the digital world has acquired its own system of official registration.

This shift is revolutionary. It marks a transfer of ownership from platforms to individuals. Whereas Web 2.0 assets were confined within corporate servers, Web 3.0 NFT assets exist in the public domain of the blockchain. Even if a game company goes bankrupt and its services shut down, the ownership record of an NFT stored in a personal wallet persists, so long as the blockchain network itself continues to operate. Admittedly, if the game associated with an item disappears, its functional or utility value may collapse. Yet this represents a fundamentally different condition: while usefulness may vanish, proof of ownership does not.

It is only upon this technological foundation that the concept of Play-to-Earn (P2E) truly takes shape. If cash transactions during the Lineage era resembled a form of “smuggling” prohibited by game companies, blockchain-based P2E has transformed this activity into legitimate trade. Players mine tokens or NFTs through gameplay, transfer them to their personal wallets, and cash them out instantly—without requiring permission—via decentralized exchanges (DEXs) or marketplaces such as OpenSea. Under these conditions, company policies such as “cash transactions are prohibited” become largely meaningless. Asset transfers occur directly between users through peer-to-peer (P2P) networks, without passing through any central server. In this way, P2E elevates player activity from an illicit workaround to a recognized form of digital economic participation.

However, while blockchain resolves the problem of ownership, it does not resolve the problem of value. Although the fact that an NFT belongs to its holder is immutable, whether that NFT is worth one thousand dollars or mere ten cents depends entirely on market supply and demand, as well as the underlying economic design of the game.
In a gold mine where everyone extracts resources but no one consumes them, gold ultimately becomes worthless—regardless of who owns it. Technology only creates the vessel; what fills it belongs to the domain of economics and governance. The speed with which technology can devolve into disaster when this fundamental truth is ignored will soon be illustrated by a vast experimental laboratory known as Axie Infinity.

03

The Rise and Fall of P2E 1.0

Axie Infinity as Survival Labor in the Philippines

In 2020, the world came to a standstill. The COVID-19 pandemic issued a global command to "stay home," and borders and storefronts shut down simultaneously. While this order translated into Netflix and remote work for citizens of developed nations, for daily wage workers in developing countries such as the Philippines, it meant something far more severe: starvation. Manila's streets emptied, street vendors lost their livelihoods, and tricycle drivers saw their incomes collapse.

Amid the ruins of a world where physical means of earning had vanished, an unexpected digital lifeboat emerged: Axie Infinity, a blockchain-based game developed by the Vietnamese startup Sky Mavis. At first glance, the game appeared deceptively simple—players collected cute monsters, known as "Axies," and pitted them against one another in battles. Yet for many Filipinos, Axie Infinity was far more than entertainment. It became a primary means of survival, a digital production tool substituting for a collapsed real-world economy.

The spark that ignited this movement was the widely publicized success story of a 22-year-old named John Aaron Ramos. When reports spread across social media and news outlets that he had used his in-game earnings to buy his family a house, the entire Philippines began to buzz.[V] The story echoed an earlier Korean legend of a Lineage player who sold an Executioner Sword to purchase a car. Cabanatuan City, where the Ramos family's miracle took place, was soon dubbed the "capital of Axie."[VI] The city effectively transformed into a vast digital mining site. Fathers who had lost their jobs during lockdowns, students with nowhere to go after schools closed, and even elderly residents unfamiliar with smartphones—all crowded around small screens, hunting monsters. What drove them was not the joy of play or the thrill of victory, but the yellow potion bottle awarded after each battle: the cashable token SLP (Smooth Love Potion).

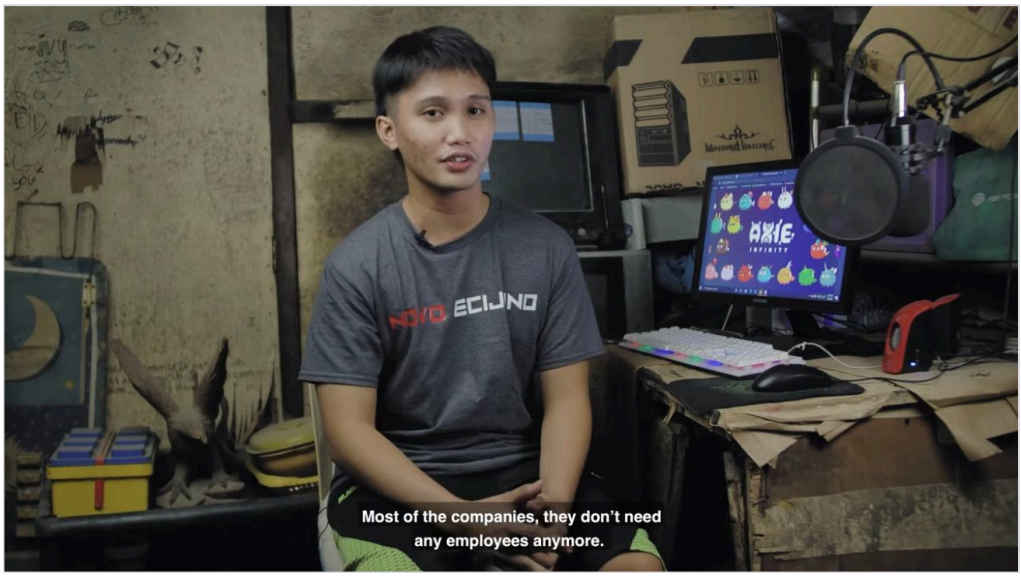
At the peak of Axie Infinity's popularity, monthly earnings from the game reached between five hundred and seven hundred dollars.[VII] Compared to the wages earned by many daily laborers in the Philippines, this appeared to be a digital El Dorado—a promise of higher income than spending long hours laboring under the scorching sun, achieved instead by tapping on a smartphone in front of an air conditioner or electric fan.

This boom reshaped the structure of labor itself. For those lacking the initial capital required to participate, a so-called "scholarship" model emerged. "Managers" lent Axie teams[4)] to players and claimed a share of the rewards generated through gameplay.[VIII] Despite its name, the arrangement closely

4)

In Axie Infinity, an 'Axie Team' refers to the basic formation of three Axies deployed for battle. Generally, securing this team is the first step to starting the game.

resembled a form of sharecropping, in which a landlord provides tools to tenant farmers and divides the harvest. Under this system, players lived a routine in which each morning began with reporting attendance to a Discord manager and meeting an assigned quota of SLP production. In every meaningful sense, they were going to work.



[Figure 3] **A Young Filipino Going to Work to Play Online Games for Survival**
In a world where jobs vanished due to the pandemic, Axie Infinity became their only "digital lifeboat," transforming gameplay into survival labor.
Source: Documentary "Play-to-Earn: NFT Gaming in the Philippines"

X is mining.

The core lesson revealed by the Axie Infinity craze in the Philippines is clear. The massive influx of players was not an expansion of play, but a migration for survival. Philippine players interviewed by TIME magazine said they started playing because they were told they could earn more money. Over time, however, many described the game as “boring and stressful.”[IX] How creative the deck building[5] was or how flashy the skill effects[6] looked became irrelevant. The only questions that mattered were: “How much SLP did I earn today?” and “How much is that worth in pesos?”

When the standard of judgment changes, language changes as well. At the time, online communities and YouTube were flooded with content focused on profit-maximization strategies. Players began to speak like miners, not gamers. Just as Bitcoin miners calculate electricity costs and profitability, Axie players multiplied their working hours by the SLP market price to calculate their daily wages. They “clocked in” only as long as this income was better than other available jobs.

This leads us to a key proposition. Play, Move, Study—whatever X represents, the moment crypto rewards are attached to that action, X is no longer perceived as play but as mining. The essence of Something-to-Earn (X2E) lies not in X, but in E—the act of earning.

5) Deck building refers to the process of creating an optimized combination of characters or skill cards that a player owns in order to increase their win rate in card or strategy games.

6) Skill effects refer to the visual animations or dazzling graphical effects that appear on screen when a character uses a skill. Generally, the more spectacular these effects are, the greater the game’s sense of impact and immersion, thereby enhancing the viewing experience.

Nomads and Settlers

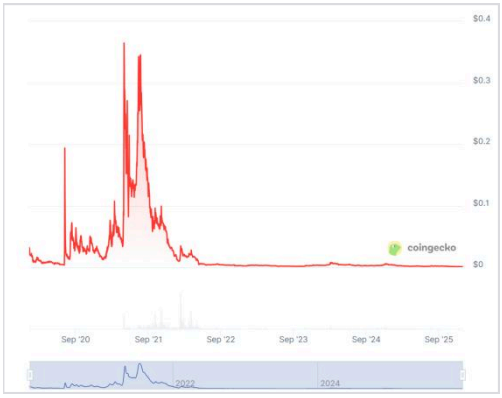
The greatest mistake made by early P2E projects, including Axie Infinity, was treating everyone on the screen as a single category: “gamers.” Project teams proudly claimed that “millions log in every day,” but that mass of users was never a uniform group. In reality, it was divided into two fundamentally different types of participants, distinguished by motivation: nomads and settlers.

The first group, nomads, are both investors and miners. To them, the game is not a playground but a factory—a temporary site for extracting profit. They have little interest in the game’s world, lore, or characters. Their only concern is return on investment: How many hours must I work to recover my initial capital, and how much can I earn after that? Nomads are cold, rational economic actors. They inject capital and activity into the ecosystem to generate short-term liquidity, then leave without hesitation the moment returns begin to decline.

Settlers, by contrast, stay up late playing with friends and willingly open their wallets to customize their characters. For them, tokens are not wages to be immediately sold but tickets to a richer experience. From an economic standpoint, settlers resemble tourists who spend money earned outside the game inside the game world. They also serve as a buffer that mitigates inflationary pressure on the in-game currency. Without settlers, the products of nomads’ labor cannot retain value.

A healthy in-game economy emerges only when these two groups coexist in proper balance. Axie Infinity’s population structure, however, had completely lost that balance. It was as if 990,000 people in a city of one million were all trying to sell, with almost no one left to buy. The moment new inflows slowed, a digital bank run began—a borderless exodus. Unlike real nations, digital nations have no gravity. In the physical world, even when an economy collapses, people cannot abandon their country overnight. Borders, visas, and the ties of family and community hold them in place. In a digital nation, none of these frictions exist. The instant profitability drops and the reason to log in disappears, it takes less than a minute to delete the app and move on to the next game down the hall offering higher returns. When token prices collapsed and the cost-effectiveness of labor fell below that of alternative jobs, the vast Axie empire emptied out in a matter of weeks. The servers continued to run and the blockchain records remained intact, but the economy—and the society that once breathed within it—had already evaporated.

Ultimately, the lesson left by P2E 1.0 is clear. In a token-reward economy, real wages inevitably converge toward the bottom tier of the global labor market, and a digital nation ceases to exist the moment even those workers stop logging in. If we hope to build a sustainable virtual nation, we must reframe the question. Not, “How many tokens should we issue, and how should we distribute them?” but rather, “How do we create settlers who will remain in this world even when rewards decline?” If we cannot answer this question, the countless X2E projects yet to emerge will be nothing more than temporary encampments for digital nomads.



[Figure 4]

Price Trend of Axie Infinity's Reward Token (SLP)

As nomads began to leave, the economy of this digital nation collapsed almost vertically, with no effective line of defense against the mass exodus.

Source: CoinMarketCap

04

A Different Trajectory of RuneScape in Venezuela

Game Money in the Shadow of a Collapsed Fiat Currency

If Axie Infinity serves as a cautionary tale of a digital nation's rapid collapse, the intersection of the British MMORPG RuneScape and the Venezuelan economic crisis reveals a very different trajectory. n the late 2010s, Venezuela was engulfed in a period of brutal hyperinflation. Prices rose by millions of percent, and it was common for price tags to change while people were standing in line at supermarket checkouts. Instead of counting banknotes, people weighed them on scales, and burning bundles of cash became more common than buying firewood.

To survive, young Venezuelans chose a form of digital exile. Their destination was RuneScape, a classic MMORPG released in 2001 by the British developer Jagex, known for its crude graphics. In shabby internet cafés and homes across Caracas, countless youths hunted monsters to accumulate in-game "gold."[x] Their goal was not leveling up or climbing rankings. They sold the gold they mined through black-market channels in exchange for dollars or Bitcoin, which they used to buy real-world groceries.[xi] For these "gold farmers," RuneScape became the only factory that paid wages.

What matters here is not a romantic claim that "game money replaced fiat currency." Rather, in a moment of national crisis, RuneScape gold functioned as an alternative income source and a minimal store of value for young Venezuelans. Compared to the speed at which the bolívar disintegrated into worthless paper, the game's internal exchange order and gold prices remained relatively predictable. Of course, game money was not without risk: prices fluctuated, and account bans or scams were constant threats. Still, players entered the game servers in search of something less volatile than their collapsing national currency. Ironically, the economic order of a single online game partially filled the void left by the state's failure to provide monetary stability.

[Figure 5]

The Horrors of Hyperinflation: 14.6 Million Bolívares to Buy One Chicken

A stark illustration of Venezuela's economic collapse, where stacks of cash were sometimes easier to weigh than count, driving citizens toward alternative digital currencies.

Source: Reuters/Carlos Garcia Rawlins via The Guardian

Why Did RuneScape Endure While Axie Infinity Collapsed?

Although both Axie Infinity and RuneScape experienced massive influxes of subsistence-type users, their fates diverged dramatically. Axie's economy collapsed within a year, while RuneScape remains resilient to this day. How was the RuneScape market able to withstand the gold-supply shock unleashed by Venezuelan players?

The answer lies in its foundational design. The secret to RuneScape's longevity is that it was never built as a money-making venture in the first place. Having operated continuously since 2001, the game had already cultivated a deep-rooted community of "settlers" long before Venezuelans entered the scene. These settlers included working professionals in North America and Europe, as well as older gamers returning out of nostalgia. For them, RuneScape was not a workplace, but a place to unwind after work, perhaps with a beer. These Western settlers had disposable income but little time. They wanted to skip tedious gathering and grinding, and they were willing to open their wallets to do so. This is precisely where Venezuelan gold farmers—rich in time but poor in capital—entered the picture. What emerged was a near-perfect international division of labor. Even as the number of Venezuelan workers surged, the strong and persistent demand for gold absorbed the supply shock and kept the economy in motion.

Ultimately, it was economic flow that determined the outcome. RuneScape's economy formed a healthy circular structure:
Settlers' demand → Venezuelan mining → Settlers' consumption.
By contrast, Axie Infinity followed a linear and fragile path:
Nomads' mining → Selling → Price collapse → Nomads' exit.
Because speculation and cashing out—not consumption—sat at the center of Axie's economy, the system lost its reason to exist the moment prices fell.

The success of any X2E model does not hinge on how many people join. It depends on how many settlers exist who are willing to buy and use what nomads produce. What sustains a virtual world is not labor performed out of necessity, but enjoyment and meaning that people are willing to pay for in order to stay. A world without this foundation is nothing more than a sandcastle, inevitably washed away by the tide.

Digital Migration and Class Division in Gaming

Placing RuneScape and Venezuela alongside Lineage and Korea on a single map reveals a vast structure that had long remained hidden beneath the surface. It shows that real-world wage gaps are being transplanted wholesale into game servers. On the monitor, all users appear equal. They wear the same armor and slay the same monsters. Yet beyond those pixels, the reality could not be more unequal.

A Venezuelan youth mining gold for ten hours a day to earn five dollars corresponds directly to a New Yorker paying five dollars to bypass ten hours of exhausting labor. For a New Yorker, five dollars is the price of a cup of coffee.

For a resident of Caracas, it can be a full day's food budget for an entire family. This massive arbitrage of monetary value is unfolding in real time, mediated by games.

This class-based division of labor was never an explicit design goal. Lineage's "workshops," RuneScape's gold farmers, and Axie Infinity's scholarship system were all spontaneous orders produced by the invisible hand of the market. They emerged as real-world inequality seeped across digital borders.

What matters is that this landscape is not merely a historical curiosity. It is a structural preview of the coming AI era. As artificial intelligence and robotic automation erase physical jobs, digital migration will become unavoidable for those displaced from the real economy. The moment when the internet reorganizes itself into a single, transnational labor market is approaching rapidly. The class structure of this market is already visible. Citizens of advanced economies, able to trade capital for time, will remain consumers. Those who connect out of necessity will become a digital proletariat, mining resources, training models, and performing data labeling in virtual mines. We must neither passively despair at this trend nor romanticize it as a "utopia where everyone earns money." The real question is how to govern this inequality. What rules are needed to prevent real-world disparities from hardening into exploitation in virtual space—and instead turn virtual economies into genuine ladders of social mobility? This is the philosophical question that must come first when designing X2E systems and the virtual economies that follow.

[Figure 6] **Class Beyond Digital Borders: A Scene from China's Game Farming Workshops**

Workers in China's "gold farming" workshops mine in-game currency in 10-hour shifts, illustrating how real-world wage gaps are transplanted into virtual economies.

Source: The Guardian (Photo: Anthony Gilmore)

05

The Digital Proletariat in the AI Era

The "Civilizational Chasm" on the Path to Utopia

Today, debates surrounding AI are deeply polarized. Yuval Noah Harari, the author of Sapiens, warns that humanity may, "for the first time in history, become a 'useless class.'"[XII] On the other hand, tech optimists such as OpenAI CEO Sam Altman prophesy that "humanity, freed from labor, will enter an age of prosperity."[XIII] While these visions diverge between dystopia and utopia, both camps are in ironic agreement on a single premise: traditional wage labor is approaching an irreversible end.

The real problem lies not in the destination, but in the journey. Even if an ideal world of full automation and universal basic income eventually arrives, getting there will take time. Humanity must first cross a dangerous transitional period—the civilizational chasm—in which the old order has collapsed, but the new safety net has yet to be built. Historically, such moments of rupture have always been the most brutal for the unprepared majority.

Past waves of automation primarily replaced human muscle. Today's AI, however, delivers precision strikes against the human mind. In logistics warehouses, robots tirelessly move boxes; on highways, self-driving trucks cruise with increasing autonomy. These developments were largely expected. The true shock arrived when large language models began to encroach on domains once thought secure: translation, accounting, software development, and even legal work. Technology advances exponentially, doubling in capability year after year, while laws and institutions remain entangled in vested interests, procedures, and inertia. This widening mismatch—where jobs disappear faster than society can construct new safety nets—deepens the chasm and makes the transition increasingly perilous.

The Survival Strategy for Transition: The Rise of "Algorithmic Nomads"

If 19th-century humanity experienced a migration from farmland to factories, the 21st century has begun a great migration from physical reality into digital virtuality. What fundamentally distinguishes this digital migration from those of the past is the absence of barriers. There is almost no friction. With nothing more than a smartphone and an internet connection—whether in a Philippine

slum or the Kenyan countryside—one can enter new economic territories with a single click. This near-zero barrier to entry creates a paradoxical landscape. Those expelled first from the real labor market—people in developing nations lacking capital, formal credentials, or passport power—become the vanguard of digital labor. Those with nowhere left to go in the physical world are the first to plant their flags in virtual space.

But they do not settle. Instead, they become algorithmic nomads, perpetually on the move. When Axie Infinity's returns fall, they migrate to another game like MIR4. When in-game item prices collapse, they pack up and shift to TikTok challenges, click-work platforms, or data-labeling apps. They remain only as long as the platform's tokenomics or algorithms make survival rational.

The crucial point is that this is not merely a tragic story unfolding in developing countries. These populations have simply reached the edge of the chasm a little earlier than the rest of us. As AI begins to replace not only factory labor but office and professional work, the middle class in advanced economies will confront the same reality. In a future where factory gates and office doors are closed, leaving only server ports open, humanity will wake each morning to a new calculation: Which platform do I commute to today? And, more urgently still: Within that platform, what can I sell to survive?

The Four Faces of Future Digital Labor

Just because everyone migrates into the same digital world does not mean they survive in the same way. Even if they turn on the same screen, connect to the same server, and play the same game, the reward structures and competitive pressures they face are fundamentally different. Digital labor will not converge into a single occupation. Instead, it will evolve into a complex ecosystem where multiple economic logics coexist. An individual's survival will depend on how quickly they can read the rules of the system, how flexibly they adapt, and how long they can endure within it.

In the AI era, digital labor is likely to crystallize into four distinct types: extractive labor, market-making, audience-building, and generative creation.

Extractive labor refers to primitive, repetitive work such as resource gathering and grinding—exemplified by SLP mining in Axie Infinity or gold farming in RuneScape. What is required here is not skill or creativity, but endurance: the ability to tolerate repetition and sustained clicking. This form of labor is easily replaceable. It is vulnerable to wage compression toward low-cost regions and, ultimately, to AI and bot automation. While human hands are still required due to bot-detection systems and enforcement by game companies, the moment automation costs fall further and evasion techniques improve, workers in this category are likely to lose their footing.

The second type is market-making. As automation accelerates and traditional jobs disappear, the population living inside games will expand, and with it, markets for in-game assets. Labor here does not involve producing goods directly, but managing value—reading market signals, evaluating scarcity, and reallocating assets. However, this domain carries profound ownership risks. The recent case of Counter-Strike[7] illustrates the problem. In October 2025,

7)

Counter-Strike 2 is a first-person shooter game developed and distributed by Valve Corporation in the United States. It has formed a massive virtual asset market, primarily through the trading of digital items like skins on the Steam Community Market.

Valve altered its rules to allow players to exchange five high-tier Red skins for a chance at top-tier drops such as knives or gloves. This single change shattered perceived scarcity, wiping out an estimated 2.7 billion dollars in market value almost overnight.[xiv] [xv] As long as the authority to define scarcity, utility, and production pathways remains centralized, asset trading markets remain structurally fragile, vulnerable to sudden redistributions of profit and loss through a single patch.

The third category is audience-building, represented by streamers[8], YouTubers, and VTubers[9]. In this domain, the ability to captivate an audience matters more than gaming skill. On screen, creators hunt monsters and complete missions, but what they actually produce are relationships and stories. Viewers do not consume perfect gameplay; they consume mistakes, wit, awkward tension, spontaneous laughter, and shared emotional moments created through real-time interaction. The commodity here is not play, but resonance. Income in this field comes not from mining, but from fandom. Donations, subscriptions, and advertising revenue do not correlate with hours worked; they scale with the depth and size of relational capital. Even as AI advances and virtual humans with flawless voices and appearances emerge, this domain is unlikely to be easily replaced. AI can clear games perfectly, but reproducing human vulnerability—hesitation under pressure, embarrassment after mistakes, genuine laughter—remains difficult.

The fourth and final category is generative creation. Platforms such as Roblox, Fortnite, and Minecraft exemplify this model. Creative workers do more than play games; they build within them. They design maps, items, skins, modes, and even entire rule systems and experiential flows. In this sense, they are architects operating inside a vast digital department store. The platform provides land and infrastructure; creators build spaces that turn visitors into long-term residents. Here, creative output functions as capital goods rather than one-off labor. Creations persist, circulate, and generate value repeatedly. This form of labor demands planning ability, aesthetic judgment, and a deep sensitivity to community desire. For creators, AI is less a rival than a powerful assistant. Even if AI accelerates production, decisions about what to create and why people stay remain fundamentally human. The defining advantage of this domain is leverage: a single well-designed map or skin can reach millions, generating income even while its creator sleeps. Labor thus escapes the linear logic of time-for-wages and enters a cycle of creation, diffusion, and reproduction.

8)

Streamers are online broadcast creators who interact with viewers and provide content through live broadcasts on platforms like Twitch and YouTube Live, thereby generating revenue.

9)

VTuber is short for 'Virtual YouTuber,' referring to creators who use motion-captured 2D or 3D avatars to operate online.

[Figure 7] **The Labor of "Resonance" That Machines Cannot Replace**

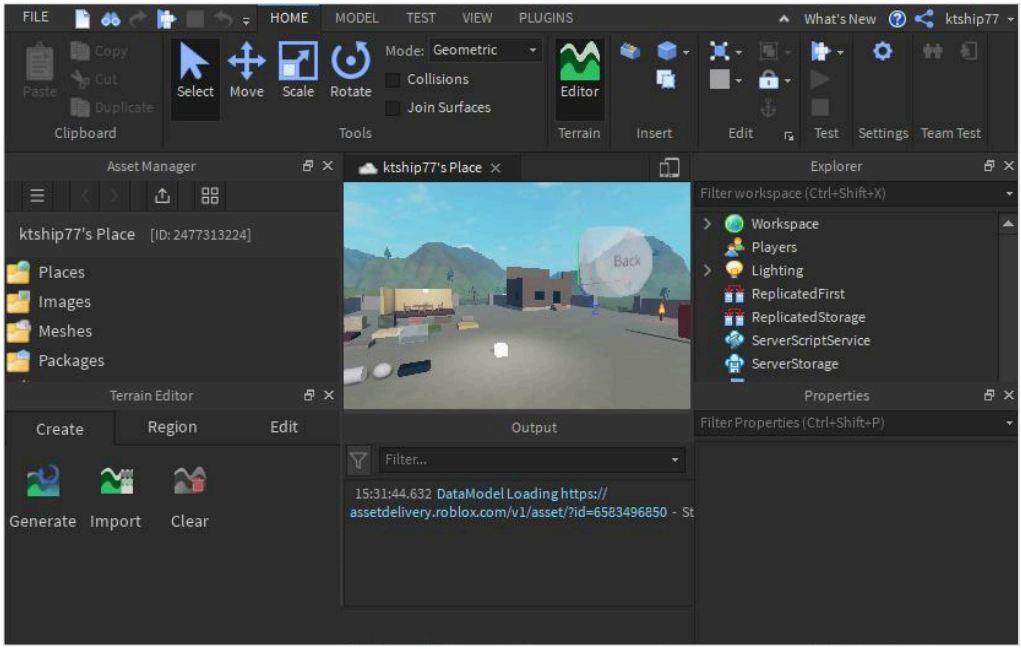
A streamer laughs while interacting with viewers in real time. AI can execute flawless gameplay, but the relational assets formed through human imperfection and emotional exchange are difficult to replicate.

Source: Naver "Chijijik" main screen

The Shift from Extraction to Creation

The conditions for survival are stark. While extractive labor appears to have the lowest barrier to entry, it is in fact the steepest cliff edge. Market-making labor offers high profit potential, but it operates within an unstable ecosystem where value can swing wildly with a single change in platform rules. By contrast, audience-building and generative creation labor allow individuals to build defenses in domains that remain uniquely human. AI can execute flawless calculations, but it struggles to replicate the empathy born of clumsy human error, the solidarity that emerges in response to others' weaknesses, and the intuition required to read a community's unspoken desires.

The survival question of the AI era is therefore brutally simple: Is my labor extraction—spending time to earn money—or creation—building relationships and shaping worlds? Survival demands an escape from pure mining and a move toward creation. We must learn to leverage our labor rather than exhaust it. We must evolve into agents who use AI as a powerful tool to accumulate their own content and worldviews. This is the essential ladder for climbing from the status of a digital sharecropper to that of a digital asset owner. n the end, what matters is not hands that mine more efficiently, but minds that build lasting relationships and design worlds that travel far beyond their creators.



[Figure 8] **Architects of the Virtual World: Roblox Studio in Action**

A creative workplace where individuals design their own rules and spaces using tools provided by the platform, representing a specialized process of creating digital assets that requires planning, design sense, and technical skills beyond simple play.

Source: Roblox Studio runtime screen (Reprinted from Tistory blog "Roblox Development Journey")

06

Sustainable X2E 2.0

Close the Mines and Build Department Stores

No matter how creative people are, if the platform only lets them do simple "mining" work, the ecosystem cannot survive. Even if many creators join, if the system treats them as disposable workers, they will eventually leave for better places. A sustainable digital world must be built on better, more thoughtful system design.

The biggest mistake of P2E 1.0 was that it trusted what could be seen on the screen. Players were all hunting monsters and finishing quests, and from the outside, this looked like success. Planners and investors felt safe and told themselves they had "secured a large number of users." But in reality, most of these users were not there to enjoy the game. They were there to earn tokens and sell them. Because of this, the ecosystem was dominated by people who wanted to cash out, not by people who wanted to spend. In the end, what decides the fate of a platform is not what users are doing, but why they logged in. This invisible difference turns into two completely opposite economic forces: buying pressure (consumption) and selling pressure (cash-out). A system where everyone must earn money in order to participate is, in the end, just a mine where everyone is getting ready to quit.

Designers of X2E 2.0 must carefully understand why users come to the platform. The important question is not, "How can we get more users?" but, "How can we keep a healthy balance of different kinds of users?" An economy can survive only when the desire of settlers to spend and use tokens is stronger than the speed at which miners produce and sell them. Instead of using a reward-focused message like, "Kill this monster and get paid," the system must switch to a consumption-focused one: "Use this token and gain fun, enjoyment, and status."

The clearest real-world answer already exists outside blockchain, in the largest metaverse of all: Roblox. The secret of Roblox's sustainability is not a clever tokenomics formula, but a structural separation of roles that locks different kinds of desire into the system. Roblox's economy runs on two interlocking groups with different purposes. On one side are gamers, the consumers. They spend real money to buy Robux. With Robux, they customize avatars, buy game passes, spend time with friends, and purchase experiences. Their goal is play, not investment. On the other side are creators, the producers. Using Roblox Studio, they build games and items and earn Robux from gamers.[xvi] When their earnings exceed a certain threshold, they can convert Robux into dollars through the Developer Exchange (DevEx). Their goal is not play, but business.

This clear separation of roles determines the platform's shape. Roblox does not

define itself as a single game, but as a marketplace of experiences—a digital department store. The platform provides the building (servers), electricity (infrastructure), the payment system (Robux), and security (rules). On top of this, creators open their own shops (supply), and users become customers who wander between them (demand). Some run small stores in quiet corners. Others strike it big in the main hall. As creators compete to attract users in their own ways, consumption becomes the foundation of the system. More content increases dwell time. More dwell time increases spending. And that spending, in turn, rewards creators—forming a self-reinforcing cycle.

The blueprint X2E 2.0 should follow is not an Axie-style mine that people dig and abandon, but a Roblox-style department store where people linger, wander, consume, and work. Instead of merely expanding the list of actions, designers must shape the motivations that bring users in. Then they must provide the stage and the rules for each type of motivation to stay, spend, and create. Only then will the X2E metaverse become not a workplace people escape from—but a world where people remain and build their lives.

From Isolated Kingdoms to a Federation

In the previous section, we examined what kind of city-state X2E 2.0 must build internally. However, for a city-state to function as a true nation, internal order alone is not enough. It needs trade routes connecting it to the outside world, a currency people trust, and steady flows of population. X2E 2.0 is no different. If internal incentive design is the heart of the economy, then ecosystem integration is the work of connecting blood vessels to that heart.

Here we must face an uncomfortable truth: building a self-contained monetary economy around a single, unknown new token is extraordinarily difficult—no matter how ambitious the design. Countless P2E 1.0 projects chose exactly this path of the "isolated kingdom." From the throne of the token issuer, they conducted airdrops, sold tokens, and proclaimed: "This token will be used as currency in our game." But on what basis should users trust a token that is neither Bitcoin nor the dollar? Because this foundation of trust was so thin, the outcome was almost always the same. The moment early participants took profits and left, prices collapsed. The ecosystem, unable to absorb the shock, collapsed with them.

The strategy X2E 2.0 must adopt is therefore clear. Instead of declaring sovereignty from nothing, it must anchor itself to an existing civilization. In practice, this means a dual-layer design: a proven base currency as the foundation, and a utility token layered on top to govern the service's functions and rules. A cryptocurrency that already has a large user base and deep liquidity can serve as a kind of "community currency" within the ecosystem. By standing on this foundation, new projects can dramatically reduce the cost of having to manufacture trust from zero.

The case of Bonk on Solana and the ecosystem built around it demonstrates how this strategy works in reality. On the surface, Bonk looks like just another meme token with a dog mascot. But its real value lies in the liquidity and social cohesion already accumulated around it. With hundreds of thousands of holders[XVII] and listings on major exchanges,[XVIII] BONK has secured a solid position within the Solana ecosystem. Built on top of this foundation, BONKfun

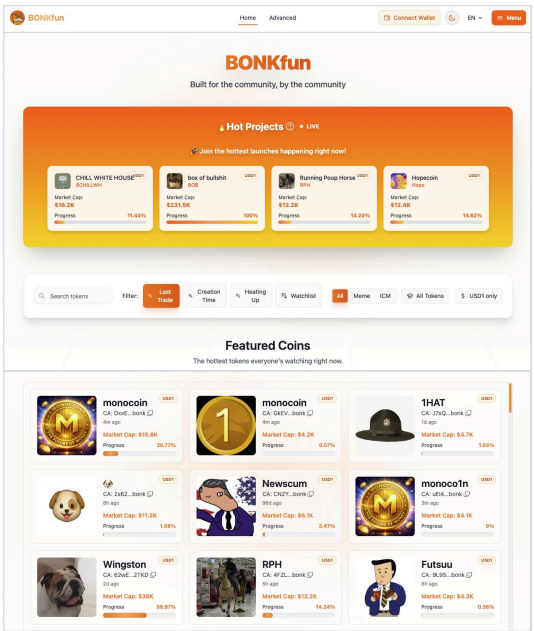
10)

A meme token launchpad refers to an automated platform that allows anyone to issue a new crypto asset and list it on the market by simply setting a name and an image, without requiring any specialized programming knowledge.

(the Bonk launchpad10)) integrates token issuance and initial distribution directly into Bonk's liquidity network, in collaboration with Raydium and the Bonk community. The most important feature is its fee allocation structure: a portion of platform profits is used to buy back and burn BONK. This is not just theory. In December 2025, the platform demonstrated the system's effectiveness by executing massive buybacks while also recording its highest profits since launch.XIX This feedback loop shows that BONKfun's growth is not merely a narrative—it functions as a real economic engine that increases the token's scarcity. It is a clear example of a self-reinforcing cycle: the existing community's liquidity and attention become the service's launch momentum, and the service's growth, in turn, strengthens the token economy.

This kind of interlocking design gives users a powerful psychological safety net. New tokens are inherently volatile, but the moment they are anchored to an established currency, people gain confidence that they "won't become worthless overnight." This is, in essence, the process of joining civilization. Trying to gather users in a barren wasteland is like trying to build a city in the wilderness. Opening a shop in a square where people already gather is a completely different game. Instead of shouting through a megaphone in the desert, set up a stall along a busy trade route. This is the most efficient customer acquisition strategy available to latecomers.

Ultimately, what the Bonk case suggests is not "play around with meme tokens." The real lesson is this: X2E 2.0 must abandon isolationism—the fantasy of building its own kingdom and its own currency from scratch. Only by entering a federation—by connecting to and cooperating with other ecosystems—can the "people who commute into games for work" finally step onto solid ground each morning with peace of mind.



[Figure 9]

Ecosystem Interconnection Model: BONKfun

BONKfun is a token issuance platform built on the BONK meme-token ecosystem, demonstrating a "federated" strategy that leverages BONK's existing liquidity and established community rather than attempting to establish an independent monetary economy.
Source: Screenshot from the official BONKfun website

Monetary Policy of a Digital Nation

The moment a platform issues its own token, it transcends being a mere service and becomes a "digital nation." This is because currency creates an economy, and an economy creates power. The designer becomes the central bank controlling the money supply, the treasury executing fiscal policy, and the legislature setting the rules. In this sense, tokenomics is not just a technical design—it is a comprehensive governance system that manages citizens' trust and market confidence. The moment this is mistaken for mere game balancing, users degenerate from citizens into mining machines, and the economy mutates from a growth engine into an instrument of exploitation.

Just as the currency of a real nation is sustained not by pieces of paper but by faith in its system, the lifeline of a digital nation is also trust. The decisive reason P2E 1.0 projects collapsed is that they treated this trust as a disposable commodity. Management teams repeatedly engaged in arbitrary governance—minting new tokens at will or changing reward rules without warning. In a market dominated by the fear that "my assets could be diluted at any moment by the operators' whims," users have no rational choice but to prepare their exit.

Therefore, in a sustainable X2E 2.0, tokenomics must not be a mere functional specification, but the constitution of the nation. A constitution is not rhetoric meant to persuade citizens—it is a set of shackles that bind the rulers themselves. Supply caps, distribution rules, burning mechanisms, and even emergency powers must all be fixed as pre-agreed rules, not announced after the fact. The operational model of the long-running MMORPG RuneScape, especially OSRS*11)*, offers an excellent reference. Major system changes are submitted to community votes, and unapproved patches are not forced through.*XX* While this may not be perfect democracy, it provides users with a powerful psychological safety net. For citizens, what matters more than flashy short-term stimulus is the stability of predictable governance.

11)

OSRS (Old School RuneScape) is a separate service of the MMORPG RuneScape operated by Jagex. It is a legacy version relaunched based on the game's 2007 build and is now operated as an independent title with a distinct update roadmap and governance structure from the main RuneScape.

Blockchain is the technology that structurally enforces this promise. What matters is not the declaration "trust us," but a mechanism that makes trust unnecessary. Imagine a world where funds are transparently accumulated in on-chain vaults, token issuance is constrained by code, and policy changes can only be executed through governance votes. Here, the system itself becomes the foundation of trust. What citizens rely on is not the goodwill of administrators, but an unyielding structure that makes abuse structurally impossible. While real-world nations ultimately rely on trusting people, digital nations can secure trust through procedures that function even when no one is trusted.

The ultimate goal of tokenomics is not an ever-rising price chart, but the establishment of citizenship. The designers of X2E 2.0 must transcend being mere game designers and become constitutional framers of a digital nation. They must design a system in which opening a wallet and accumulating game-time are not perceived as risky bets, but as meaningful contributions to a shared world. What they must build is the very order that allows citizens to live their lives without leaving the game's dominion.

07

Conclusion

We have examined various cases, starting with Lineage in Korea, moving through Axie Infinity in the Philippines and RuneScape in Venezuela, and extending to the experiments of Roblox and Bonk. If we interpret this trajectory merely as the rise and fall of the gaming industry, we risk missing the most important signal. What we are really seeing is a record of a digital diaspora—humanity, losing its physical foothold, wandering in search of new land in the virtual realm.

People commuting into online games are no longer a strange headline. As AI and automation continue to replace existing jobs, the center of gravity of work will inevitably shift from factories to platforms, and from offices to servers. In this sense, X2E and the metaverse must not remain speculative bubbles that burst and disappear. They should be understood as a social buffer zone for humanity—now facing the risk of mass technological displacement—and as a new frontier for economic activity.

At its core, money is proof of labor. In the traditional wage system, earning money meant going to a specific place at a specific time and receiving proof that "I contributed this much to society." But in an era where robots and algorithms replace humans, we can no longer prove our value in the old way. This does not mean human value disappears. Only the stage changes. On this new stage—the virtual world—some produce resources, some consume, some create culture, and some design worlds. The moment we recognize these activities as work, they deserve compensation just as much as labor in the physical world.

The problem is that this shift does not automatically guarantee a healthy economy. The tragedy of P2E 1.0 came precisely from this point. Early projects tried to ground the value of digital labor not in real consumption, but in tokens themselves. It was a distorted structure: demand was weak, but supply kept exploding. Few people opened their wallets for enjoyment, while many logged in only for profit. It was like a factory running 24/7 with no customers. When token prices collapsed, the digital nation collapsed with them.

What we must now design are the systems and ethics that prevent this failure from repeating. Through motivation design, we must classify users not by what they do, but by why they participate, and maintain a healthy balance between nomads and settlers. Through ecosystem integration, we must anchor economies to proven base currencies instead of isolated tokens. Through governance, tokenomics must be elevated into transparent monetary policy, where user participation and oversight genuinely work. Only then can those who "commute into online games" be recognized not as digital proletarians, but as digital citizens who receive fair compensation.

In the end, this is not a story about technology. It is a story about humanity. As

AI brings the era of traditional labor to a close, we are being forced to rewrite the definition of work itself. Whether this great digital migration becomes a miserable exile, or a second Renaissance growing from barren soil, depends entirely on our design. What we need at this crossroads is neither vague optimism nor helpless pessimism, but a robust system and philosophy that prevents humans from becoming mere cogs in a machine. In the near future, games and the metaverse will become humanity's next dwelling place—where we form connections, protect one another, and rebuild our lives.

08

References

I "Minimum Wage Status." Minimum Wage Commission, www.minimumwage.go.kr/minWage/policy/decisionMain.do. Accessed December 17, 2025.

II Choi Byung-jun. "Lineage Changes Flat-Rate Pricing Plan After 10 Years." ZDNet Korea, July 16, 2008, zdnet.co.kr/view/?no=00000039171059. Accessed December 17, 2025.

III "Lineage: Players Stirred by Appearance of +5 Enhanced Ultimate Execution Sword." Korea Economic Daily (Nate News), August 10, 2015, https://news.nate.com/view/20150810n14088. Accessed December 17, 2025.

IV Buterin, Vitalik. “Vitalik Buterin.” about.me/vitalikbuterin. Accessed December 17, 2025.

V Elliott, Vittoria. "Some Axie Infinity players amassed fortunes — now the Philippine government wants its cut." Rest of World, 30 Sep. 2021, restofworld.org/2021/axie-players-are-facing-taxes. Accessed 17 Dec. 2025.

VI Chae Myeong-jun. "'P2E Game Boom' Mirage... All That's Left Is a Mountain of Debt." Segye Ilbo, August 31, 2023, www.segye.com/newsView/20230830515250. Accessed December 17, 2025.

VII "'Games as a Livelihood?' An Era of Earning 1 Million Won Monthly from Gaming... Only Korea is the 'Exception'." Dong-A Ilbo, October 13, 2021,www.donga.com/news/It/article/all/20211013/109677885/1. Accessed December 17, 2025.

VIII Win, Khor Win. "Play-To-Earn: A Study on Scholarship Viability." CoinGecko, 22 Apr. 2024, www.coingecko.com/research/publications/play-to-earn-a-study-on-scholarship-viability. Accessed 17 Dec. 2025.

IX Chow, Andrew R., and Chad de Guzman. "A Crypto Game Promised to Lift Filipinos Out of Poverty. Here's What Happened Instead." TIME, 25 July 2022, time.com/6199385/axie-infinity-crypto-game-philippines-debt. Accessed 17 Dec. 2025.

X Aronczyk, Amanda, and Erika Beras. "Video Gaming The System." NPR, 21 July 2021, www.npr.org/2021/07/21/1018915121/video-gaming-the-system. Accessed 17 Dec. 2025.

XI Dubrowski, Doug, et al. "Playing for Their Lives: How a 2001 Video Game Is Feeding Venezuela." The National Interest, 26 Mar. 2019, nationalinterest.org/feature/playing-their-lives-how-2001-video-game-feeding-venezuela-49187. Accessed 17 Dec. 2025.

XII Harari, Yuval Noah. "The Meaning of Life in a World without Work." The Guardian, 8 May 2017, www.theguardian.com/technology/2017/may/08/virtual-reality-religion-robots-sapiens-book. Accessed 17 Dec. 2025.

XIII Altman, Sam. "The Intelligence Age." Sam Altman, 23 Sept. 2024, ia.samaltman.com. Accessed 17 Dec. 2025.

XIV Koselke, Anna. "Counter-Strike 2 Community Left in Shambles along with Steam Marketplace after Valve's New “Trade-Up” Update Turns $10 Skins into $1,000 Skins and Vice-Versa: "This update has made some collectors very rich"." GamesRadar+, 23 Oct. 2025, www.gamesradar.com/games/fps/counter-strike-2-community-left-in-shambles-along-with-steam-marketplace-after-valves-new-trade-up-update-turns-usd10-skins-into-usd1-000-skins-and-vice-versa-this-update-has-made-some-collectors-very-rich/. Accessed 18 Dec. 2025.

XV Ahn Il-beom. "'Counter-Strike 2' Skin Trading Market in Turmoil... 4 Trillion Won Vanishes in a Single Patch." Kyunghyang Games, October 28, 2025, www.khgames.co.kr/news/articleView.html?idxno=245712 . Accessed December 18, 2025.

XVI "Get Started on Roblox." Roblox Corporation, create.roblox.com/docs/en-US/get-started. Accessed December 17, 2025.

XVII "Token Bonk." Solscan, solscan.io/token DezXAZ8z7PnrnRJjz3wXBoRgixCa6xjnB7YaB1pPB263?page_size=100#markets. Accessed December 17, 2025.

XVIII "Bonk.“ CoinMarketcap, coinmarketcap.com/currencies/bonk1/. Accessed 17 Dec. 2025.

XIX “700% Revenue Run Rate Surge: Bonk, Inc. Reports Explosive Growth for BONK.fun.” Tri-City Herald, 15 Dec. 2025, www.tri-cityherald.com/press-releases/article313715339.html. Accessed 18 Dec. 2025.

XX "Polling Charter." Old School RuneScape, Jagex, osrs.runescape.com/polling-charter. Accessed 17 Dec. 2025.

People Commuting into Online Games

Survival Strategies in the Age of AI and the Future of the Metaverse

Researcher

Hyemin Son Minguk Seok Daehan Seok

Corresponding Author

Taemin Oh

Editorial Design

Seongah Youn

Translation

Samuel J. Hahn

Contact

Hyemin Son hyeomin0109@gmail.com
Minguk Seok minstone@stonehm.io
Daehan Seok hanstone@stonehm.io