

SCDO Laboratory · TECH PR · UNIT 02

Automated Contract Ledgers for AI Agents · Next-Gen Smart Payments

Web3 Primer: The Internet Agents Need

From accounts to wallets — next-gen app coordinates · Ying Willam Zhang · 2026

> Disclaimer: This primer is for education only — not investment, legal, or tax advice.

2. Web3

> SCDO Lab · Web3 Primer for Newcomers v2 · English illustrated edition
> Full bilingual book: Chinese `/learn/web3/` · English `/learn/web3/en/`
> Chapter 1 covered Bitcoin as one digital-cash system. This chapter zooms out: what people mean by **Web3**, how it differs from everyday apps, what actually ships in 2026, and how a newcomer can start safely.
> **Not investment advice. Not a hype manifesto.**

Opening: turn the foam down

Talk about Web3 and you usually hear three voices:

1. **Cure-all**: it will replace Big Tech, banks, and governments—tomorrow.
2. **All scam**: anything with a chain or a token is a rug.
3. **Jargon maze**: DAO, DApp, TVL, account abstraction… three minutes and people close the tab.

We pick a fourth: **engineering and product**.
Web3 is not a company and not a single chain. It is an attempt to use **blockchains** + **cryptographic keys** + **open protocols** so that parts of the internet move from "you must trust this platform" toward "rules are public and critical actions are verifiable." What already works is concrete; what is oversold is also concrete. After this chapter you should tell them apart.

Naming note: people mix **Web3** and **Web 3.0**. Early texts said Web 3.0; spoken English today usually says **Web3**. We use Web3 below. It is not the older "Semantic Web 3.0" idea—if someone says 3.0, ask which lineage they mean.

What is Web3, really?

One-sentence version

Web3 ≈ using blockchain and related tech so users can hold digital assets and credentials themselves, and use online apps with less dependence on a single platform that "has the final say."

Shorter: **less "trust this company," more "you can check."**



This direction was articulated in the mid-2010s by people around early Ethereum (long interview reprints from the old manuscript are **not** copied here). The point is engineering: reduce blind trust in authorities; bake verifiability into protocols. We agree with the direction—and must add a 2026 reality check: **eliminating every intermediary does not exist**. Exchanges, browsers, phone OSes, DNS, and stablecoin issuers are still intermediaries. Web3 changes **which slice** need not trust a single ledger-keeper; it does not put you in a vacuum.

Why bother?

Mainstream internet (Web2) is extremely useful: social, shopping, payments, video—a few giants cover most of daily life. The pain sits on top of that convenience:

- **Accounts live elsewhere**: bans, rule changes, opaque ranking—you leave or accept; taking data with you is hard.
- **Money and points live elsewhere**: skins, balances, creator payouts can vanish if a service shuts down or rewrites terms.
- **High trust, thin evidence**: you believe “the backend will honor the blog post”; individuals rarely audit the database.

Web3 aims at **ownership and control**—signatures prove “I authorized this”; public ledgers prove “this state update happened.” That is not automatically a fair society; it is one more technical option.

Less blind trust, more verification

“Trust” here is a systems word, not advice to distrust friends:

> You must assume a black box is honest, always online, and will not rewrite the rules—without independent evidence.

Bitcoin transfers: the network can check double-spends.
Smart-contract swaps: you (or tools you trust) can read code and on-chain results, not only marketing copy.

If your coins sit on a centralized exchange, you are back to "trust that company's ledger." **The tool can be Web3 while the habit stays Web2.** Newcomers often miss that.

Can it break monopolies?

Vision decks love "break Big Tech lock-in." Honest answer: **weaken lock-in in places; overnight overthrow is unlikely.**

- Cryptography lets ordinary people encrypt and self-custody—harder for a platform to unilaterally erase on-chain balances (custody and legal process are separate).
- Traffic, fiat on/off-ramps, app stores, and licenses remain highly centralized.
- Many "Web3 apps" are still ordinary websites: seize the domain or kill the API and UX dies.

A saner goal: **critical assets and identity should not live only in one company's database**. Companies can still ship great UI without unilaterally wiping your on-chain rights.

What does decentralization mean?

We use a checkable definition:

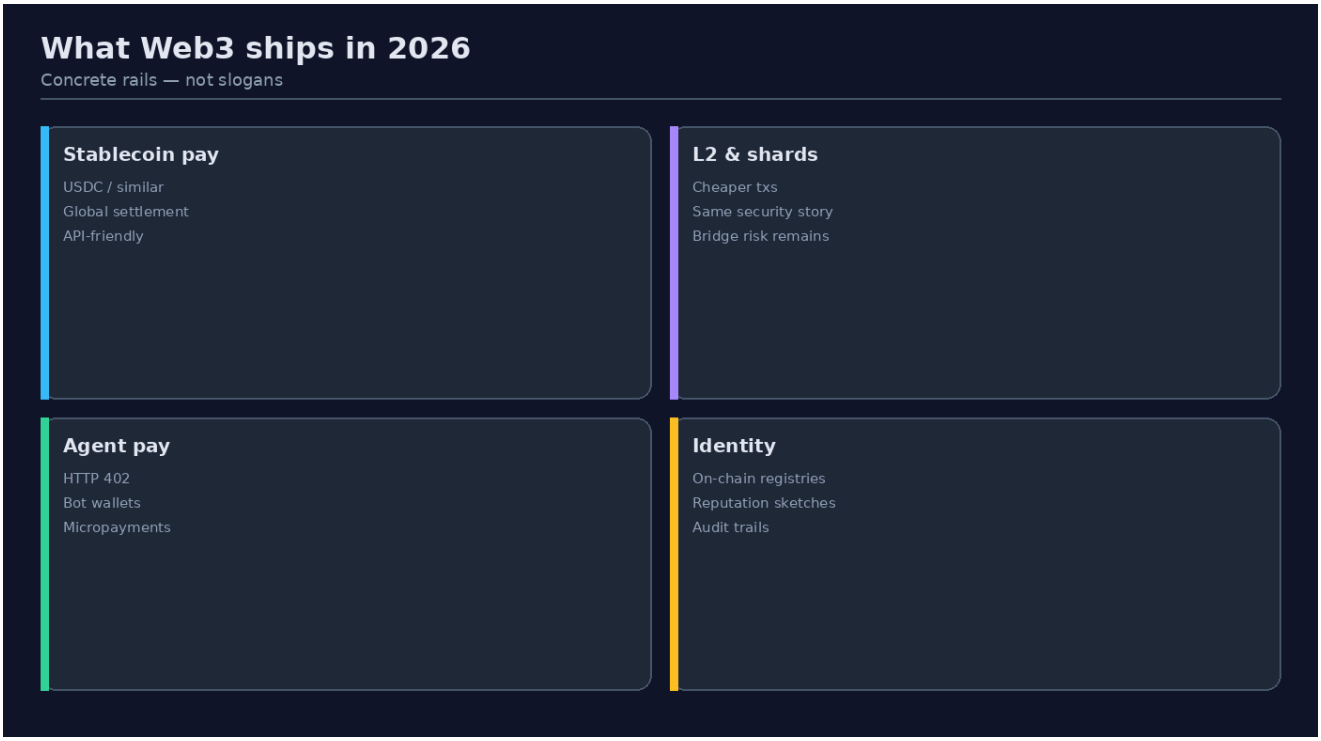
Is there a single point that can halt the system, rewrite history, or move your assets without your consent?



- **Fully decentralized**: almost never exists in pure form.
- **Decentralized enough**: attacks/failures are expensive; alternatives exist; users can run nodes or switch wallets.
- **Decentralization theater**: tokens are on-chain, but upgrades, sequencers, bridges, and oracles are a small club—look closely.

Decentralization ≠ lawlessness. Compliance, tax, and fraud rules still apply in most jurisdictions. Read it as **reducing single-party domination in tech**, not as a free-fire zone.

What does the Web3 world look like in 2026? (no moon math)



You can already touch:

Layer	What you may meet
Assets	BTC, ETH, stablecoins, many tokens; some people access via exchanges or (in some markets) ETFs
Apps	DeFi swap/lend, NFT credentials, game items, on-chain social protocols
Gateways	Browser/mobile wallets, exchange apps, growing smart wallets / account abstraction
Infrastructure	Public chains, Layer 2s, bridges, oracles, indexers

Still hard or unfinished:

- Mass-market UX with almost no seed-phrase learning curve (improving, not done);
- Seamless multi-chain without bridge risk;
- Replacing super-app social and payments habits wholesale with on-chain apps.

Honest 2026 takeaway: Web3 moved from “only miners and geeks” to “real financial and credential infrastructure,” but it has **not** fully replaced Web2. Treat it as an **incremental toolbox**, not a religion.

Common myths (clear the mines first)

1. **“On-chain = decentralized and safe.”**
   Contracts can have upgrade backdoors; bridges can be multisigs; frontends can phish.

A chain guarantees **execution under current rules**, not that rules favor you or that you clicked the real site.

2. **“Token + NFT = successful Web3 startup.”**
   Tokens coordinate incentives—or sell air. Real users, cash flow, or credential demand beat “we launched a coin.”

3. **“Decentralized apps ignore the law.”**
   Builders, issuers, fiat ramps, and marketing still meet finance and consumer rules in many places. Narrative ≠ compliance homework.

4. **“I installed a browser wallet, so I’m Web3.”**
   If funds sit on an exchange, you never open an explorer, and you approve every signature—habits are still Web2. Tools ≠ literacy.

5. **“AI + chain = money printer bot.”**
   In 2026, agents can call APIs and even pay; oversized permissions also steal and fail faster. Automation needs **limits, allowlists, audit logs**—why we talk about Agent Ledger: explain what the machine did before chasing speed.

How should ordinary people participate?

Old titles screamed “the wave is here.” We ask instead: **if you are curious, how do you learn cheaply and safely?**

Web1 → Web2 → Web3 in three lines



Skip the long timeline; remember the user role:

1. **Web1 (mostly read)**: portals and static pages—you are a reader.
2. **Web2 (read/write + platforms)**: you post and trade, but accounts, fans, data, and ranking live on platforms.
3. **Web3 (read/write + own)**: you still use apps, but key assets and some identity can be key-held; rules prefer protocols/contracts.

"User-controlled data/assets" is directionally right **only if** you truly hold keys and understand what you sign.

Why learn at all?

Even without going "all in":

- Digital ownership fights will grow (tickets, memberships, creator splits, game items);
- Institutions already experiment with chains and on-chain assets;
- Scammers borrow Web3 jargon—**ignorance is how you get farmed**.

Not worth it: FOMO "you're late," betting rent money, or letting someone else "operate for you" (that ≈ handing them the keys).

Practical differences vs Web2

Dimension	Typical Web2	Typical Web3
Login	Phone / SSO	Address + signature (email/social login also emerging)
Assets	Platform balance	On-chain tokens / NFTs (or still custodied on exchanges)
Rule changes	Company blog	Often governance or upgrade paths you can observe
Mistakes	Support ticket	Usually no rollback; you own the risk
Transparency	Opaque DB	Public ledger; readability needs tools

The sharpest UX shock is rarely ideology: **undo is hard.** Wrong approvals and wrong addresses usually stay wrong. Chapter 9 covers security.

What can it deliver? (sorted by proven-ness)

Comparatively solid:

- **Programmable payments / DeFi Lego**: swaps, lending, collateral—useful, with liquidation and contract risk.
- **Public credentials (NFTs, etc.)**: tickets, badges, memberships, items that prove holding.
- **Another rail for value transfer**: where lawful, as a complement—not a magic passport.

Early and noisy:

- On-chain social replacing super-apps;
- Metaverse land narratives;
- “Everyone DAOs away the company.”

SCDO Lab, lightly:
What tends to matter is whether **verifiable records and incentives serve real work**—e.g. when an AI agent acts for you, are there auditable ledgers and permission bounds? We call that Agent Ledger thinking: machines may automate; accountability must not blur. Later chapters return to this; no product brochure here.

A seven-day newcomer path (even before depositing much)



1. Separate **self-custody** from **exchange custody**.
2. Install a reputable wallet; try a **tiny** amount you can lose (or an official testnet).
3. Learn to read address, network, and explorer status.
4. Read one signature popup: `approve` can be dangerous.
5. Back up the seed offline; tell no one.
6. Treat “guaranteed profit / insider allocation” DMs as high risk by default.
7. Pick one track—Bitcoin, Ethereum+L2, or security habits—beat chasing twenty airdrops.

Laws differ by jurisdiction. Follow yours. This book offers no evasion tips.

Web3 glossary (compact)

The old manuscript had a hundred overlapping entries. Keep a **post-chapter survival set**; details unfold later.

Infrastructure

- **Blockchain / public chain**: open ledger and execution environment (Ch. 3).
- **Node**: machine that runs software to store or verify the ledger.
- **Consensus**: who proposes blocks and how cheaters are punished (PoW/PoS; Ch. 1).
- **Layer 2 (L2)**: scaling under an L1 security umbrella (Ch. 4).
- **Smart contract**: on-chain program that runs when conditions are met (Ch. 3).
- **Oracle**: feeds off-chain data into contracts—often a trust point.
- **Bridge**: moves assets/messages across chains—historically accident-prone.

Accounts & assets

- **Wallet**: tool that holds keys and creates signatures.
- **Private key / seed phrase**: control itself.
- **Address**: public receive/identity label (pseudonymous).
- **Token**: transferable on-chain unit; fungible (e.g. ERC-20) or NFT (e.g. ERC-721).
- **Stablecoin**: token aiming to track fiat etc.—check reserves and issuer risk.
- **Gas / fees**: payment for inclusion/execution.

Apps & orgs

- **DApp**: frontend + contracts (decentralization varies).
- **DeFi**: decentralized finance apps (Ch. 5).
- **DAO**: on-chain coordination experiments; quality varies wildly.
- **TVL**: value locked—useful, gameable, never enough alone.
- **NFT**: non-fungible credential ≠ “must be a valuable picture.”
- **Account abstraction / smart wallets**: login, recovery, sponsored gas (in progress).
- **AI agent**: program that calls tools/contracts; permissions and audit beat chat skill.

Security mantras

- **Allowance**: permission for a contract to move your tokens—over-approval is a theft magnet.
- **Phishing**: fake sites, airdrops, “support” asking you to sign or export seeds.
- **Self-custody vs custody**: you hold keys vs someone else—convenience ↔ risk.

Figure index

File	Role
`assets/ch02/fig01-web1-web2-web3.png`	Web1→2→3 roles
`assets/ch02/fig01-web1-web2-web3-zh.png`	Chinese caption strip

File	Role
`assets/ch02/fig02-trust-vs-verify.png`	Blind trust vs verify
`assets/ch02/fig02-trust-vs-verify-zh.png`	Chinese caption strip
`assets/ch02/fig03-decentralization-spectrum.png`	Decentralization spectrum
`assets/ch02/fig04-web3-2026-ships.png`	2026 shipped vs still hard
`assets/ch02/fig05-newcomer-path.png`	Newcomer 7-day path

Original SCDO Lab diagrams; no third-party brand marks.

Chapter wrap

Five takeaways:

1. Web3’s core promise is **verifiability and self-custody**, not guaranteed riches.
2. Web1 read, Web2 platform read/write, Web3 tries **read/write + ownership**—reality is hybrid.
3. For decentralization, ask **where the single point is**.
4. 2026 has real pieces (assets, DeFi, L2s, credentials) and loud unfinished stories.
5. Newcomer skill #1 is **keys and signatures**; projects come second.

Next: **public chains**—what they are, why Ethereum matters, smart contracts and token standards, and a 2026 map without a hype mega-list.

(End of Chapter 2 · v2 English illustrated edition · SCDO Lab)