Real-World Assets: The Business of Tokenization

An Ultra-Simple Visual Guide, Explained from Zero

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How to Read This Lecture

This is the plain-language version. It assumes you know nothing about finance or blockchain. That is on purpose.

- Every new word is explained the moment it appears
- A picture or diagram on every slide
- No formulas and no math: just ideas and examples

Want the deep technical detail? It is kept in the Appendix at the end, so the main slides stay simple.

The one question

this lecture answers:

"How do you build a real business by putting real-world things onto a blockchain, and who makes money doing it?"

If a slide ever uses a word you do not know, that is a mistake on our side, not yours. Every term is defined here before it is used.

A Puzzle: 400 Trillion Dollars, Sitting Still

Add up everything valuable that people own in the world: houses and office buildings, shares in companies, loans, government bonds.

The total is roughly **400 to 500 trillion dollars**. A trillion is a million millions, so this number is almost too big to picture.

Now ask one simple question: **how much of it has been put onto a blockchain?** The answer is the puzzle this whole lecture solves.

Everything the world owns

about $400 trillion

houses, shares, loans, bonds

put on a blockchain so far:

about $15 billion

a tiny sliver of the total

$15 billion sounds large, but next to $400 trillion it is about four thousandths of one percent. Almost everything is still waiting.

Three Words First: Blockchain, Token, On-Chain

Before anything else, three words. Every later slide uses them, so we define them now and never assume them.

Blockchain

A shared digital notebook. Many computers each keep a copy. Nobody can secretly change or erase a past entry.

Token

One entry in that notebook. It records that a specific item belongs to a specific person.

On-chain

Written into that notebook. Its opposite, *off-chain*, means the ordinary world outside the notebook.

In one sentence: a *token* sits *on-chain* inside a *blockchain*, and it says who owns what.

That is the entire starting vocabulary. If a later slide adds a word, it will define it the same way, in plain language, before using it.

What “Tokenize” Means

To tokenize something is to create a token (a notebook entry) that stands for ownership of a real thing.

Think of a coat-check ticket. You hand your coat to the cloakroom and get a small numbered ticket. The ticket is not the coat. But whoever holds the ticket can claim the coat.

A token works the same way: it is a claim ticket for an asset.

The coat stays on the hook

Tokenizing a building does **not** move the building.

The building stays exactly where it is. Only the **proof of who owns it** becomes a token.

Key idea to carry forward: the token is a claim on the asset, never the asset itself. Confusing the two causes most beginner mistakes.

What a Real-World Asset Is

A **Real-World Asset**, or **RWA**, is a real, off-chain thing whose ownership has been turned into a token.

Real-World Asset

Exists in the real world first. A flat in Berlin, a loan to a small company, a US government bond, an unpaid invoice. A token is added afterwards.

Crypto-native asset

Exists only on the blockchain. Bitcoin is the clearest example: there is no off-chain Bitcoin sitting in a vault somewhere.

This lecture is **only** about Real-World Assets: a real thing, plus a token that represents owning it.

Quick test: if you can touch it, visit it, or sue someone over it in a normal court, it is a real-world asset. Bitcoin fails all three.

Why Bother? What Tokenizing Gives You

Putting a real asset on a blockchain is work. It is only worth doing because it unlocks four things a paper deed cannot.

- **Fractional ownership.** A token can be split into tiny pieces, so a $2 million building can be owned by 4000 people at $500 each. *Fractional* simply means "a small fraction of the whole."
- **Open access.** Anyone with an internet connection can hold the token, not only large institutions.
- **Fast settlement.** Ownership changes hands in seconds, instead of days of paperwork.
- **Always on.** The notebook never closes. Trading is not limited to office hours.

The headline benefit: things that were once locked up and hard to sell become easy to split, hold, and trade.

Hold on to the word fractional ownership. It is the single biggest reason ordinary people care about RWAs.

Why Is Almost Nothing Tokenized Yet?

If the benefits are real, why is only $15 billion of $400 trillion on-chain? Four barriers, and notice that only one of them is about technology.

1. Legal
A token cannot transfer the legal title to a house by itself. National law decides who owns property, not a blockchain.

2. Technical
The blockchain cannot check, on its own, that the real building still exists and is in good shape.

3. Regulatory
If a token counts as a financial security, strict rules and registration costs apply. We unpack this later.

4. Business
Someone has to pay for all this, and someone has to earn a profit. If the numbers do not work, nothing happens.

This is why the lecture is called the business of tokenization. The hard problems are legal, regulatory, and commercial, not coding.

The Legal Box: What an SPV Is

The legal barrier has a standard fix. You create a small, single-purpose company that legally owns the asset, and nothing else.

This company is called a **Special Purpose Vehicle**, or **SPV**. "Vehicle" here just means a legal container; "special purpose" means it does exactly one job.

The token then represents **a share of the SPV**, and the SPV owns the building. Courts already understand company shares, so the law works again.

One building, one box

1. A building in Berlin
2. is owned by an **SPV**, a one-job company
3. shares of that SPV become the **tokens** you hold

Watch for this pattern all lecture: the token is never the building. There is always a legal box (the SPV) standing in between.

The Blind Blockchain: What an Oracle Is

A blockchain is excellent at remembering what it was told. But it cannot **see the outside world** on its own. It does not know if a building burned down or a borrower stopped paying.

The piece of software that feeds outside facts into the blockchain is called an **oracle**. (The name borrows from ancient oracles who delivered news from elsewhere.)

The catch: someone has to be trusted to run the oracle honestly. A perfect token backed by a lying oracle is worthless.

The oracle problem

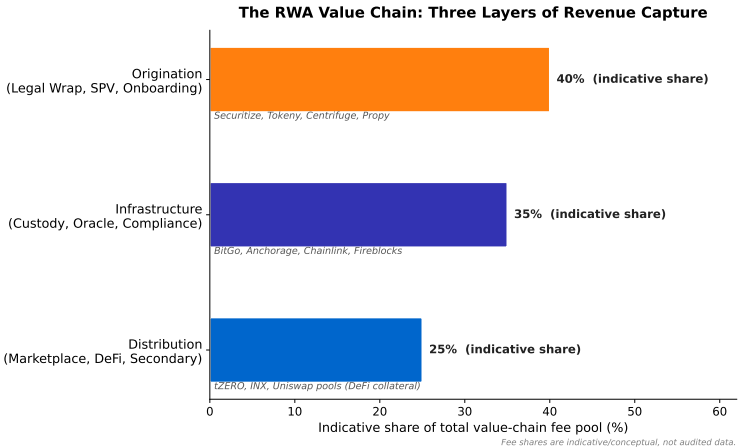
1. Real world: "the building is fine"
2. an **oracle** carries that fact in
3. the blockchain writes it down

If the oracle lies, the blockchain faithfully records the lie.

The oracle is the bridge between the real world and the notebook. It is also the weakest plank: trust still has to come from somewhere.

The RWA Value Chain: Three Steps

Turning a real asset into a token people can buy takes three steps in a row. Together they are called the **value chain**: the path an asset travels from real world to investor.



Origination = finding and preparing the asset. Infrastructure = the technical and legal plumbing. Distribution = getting the token to investors. The next slide shows who earns money at each step.

Where the Money Is Made on Each Step

Each of the three steps earns money in a different way. Knowing which step a company sits on tells you how it makes a profit.

Origination
Big fee, paid once, when a new asset is brought on-chain. High reward, but you must keep finding new assets.

Infrastructure
Small fee, paid again and again, for keeping the plumbing running. Steady and predictable, like a subscription.

Distribution
Tiny fee per trade, but huge numbers of trades. Thin margins, won only on large volume.

The lesson: winning startups own **one** step deeply, rather than doing all three poorly.

A subscription analogy: origination is selling the house, infrastructure is the monthly utility bill, distribution is the corner shop earning cents per item.

Recap: The Words You Now Know

Before we look at where RWAs actually work, here is everything Block A defined. If any are fuzzy, this is the slide to revisit.

- **Blockchain**: a shared notebook nobody can secretly edit
- **Token**: one ownership entry in it
- **On-chain / off-chain**: inside / outside the notebook
- **Tokenize**: make a token that stands for a real asset
- **Real-World Asset (RWA)**: a real thing, plus its token
- **Fractional ownership**: owning a small slice of a whole
- **SPV**: the one-job legal company that owns the asset
- **Oracle**: software that feeds outside facts on-chain

Next: the four real-world areas where tokenizing assets is already a working business.

You now have every word needed for the rest of the lecture. New terms still get defined, but the foundation is complete.

Four Places This Already Works

Real-world assets are not just a theory. Four areas already have real money flowing and real businesses running. We will visit each one.

Real estate
flats and buildings

Private credit
loans to companies

Trade finance
paying for shipped goods

Carbon credits
permits to pollute less

For each sector we ask the same three questions: **what is it**, **why does a blockchain help**, and **where is the catch**?

Notice the pattern in advance: in every sector the technology is the easy part. The catch is always legal, regulatory, or about trust.

Sector 1: Real Estate, the Idea

Property is the biggest pile of value on Earth: about $326 trillion of houses, flats, and offices.

But property is **illiquid**. Illiquid means hard to sell quickly without cutting the price. Cash is liquid; a house is not. Selling one takes months.

And the ticket is large: buying property normally needs tens of thousands of euros at once.

What tokens change

A token lets you own a **fraction** of a building from as little as **$**50.

A **REIT** (a real-estate investment fund) already pools property for small investors. Tokens go further: direct, global, and tradable at any hour.

Illiquid is the problem word for this sector. Fractional ownership through tokens is the proposed cure.

Sector 1: Real Estate, the Business

RealT is a live example. It tokenizes rental homes in the United States. If you hold the token, you receive a share of the rent, paid every day in digital dollars.

How RealT earns money:

- A one-time fee when a property is first tokenized
- An ongoing fee for managing the property

Where the catch is

The hard part is **not** the token. It is the SPV (the one-job company) for each property, the local managers, and each country's law.

A competitor can copy the software in an afternoon. They cannot copy 500 legal companies and local teams.

First sighting of a rule that returns all lecture: in real estate the moat is the legal wrapper and the people, never the code.

Sector 2: Private Credit, What It Is

Private credit means loans made to companies **outside** the public bond market and outside ordinary banks.

Normally only large institutions can take part, with minimum investments around $1 million. An ordinary saver is simply locked out.

On a blockchain, many small lenders put money into a shared **pool**, and the pool lends to real companies. You can join from about $1000 and earn interest from those real loans.

Who runs these pools

Centrifuge: lending pools on the Ethereum blockchain.

Maple: moved to safer loans after losses in 2022.

Goldfinch: lends to finance companies in Africa and Southeast Asia.

The real win here is access: a saver in almost any country can now lend to businesses once reserved for large institutions.

Sector 2: Private Credit, How a Pool Shares Risk

A lending pool splits its investors into layers called **tranches**. A tranche is one layer, with its own mix of risk and reward.

Senior tranche: paid back first. Lower interest, but safer.

Junior tranche: paid back last, and absorbs the first losses if a borrower fails. Higher interest, as the reward for taking that risk.

Senior: paid first, safer, earns less

Junior: paid last, takes losses first, earns more

Senior investors trade reward for safety. Junior investors trade safety for reward. One pool, two different deals.

Tranching lets one pool serve two kinds of people at once: the cautious saver and the risk-taker chasing a higher return.

Sector 3: Trade Finance

Trade finance is the money that lets goods move between a seller and a buyer before the final payment arrives.

Often a supplier ships goods and then waits to be paid. The unpaid bill is called an **invoice**. Waiting for it strains small companies.

Banks reject roughly 40 to 50 percent of small-business trade-finance requests. Tokenizing the invoice lets non-bank investors fund it instead.

Where the catch is

Trade finance needs many parties (buyer, seller, shipper, insurer) to agree and share data.

Getting them all to cooperate is harder than any software problem. Two early efforts, Marco Polo and Contour, both shut down.

The pattern repeats: the blockchain worked fine. Coordinating many separate real-world companies is what failed.

Sector 4: Carbon Credits, a Cautionary Tale

A **carbon credit** is a tradable permit. One credit stands for one ton of carbon dioxide kept out of the air.

A project called **Toucan** brought carbon credits on-chain, hoping to make a slow and unclear market faster and more open.

Then it went wrong. A group called KlimaDAO bought up huge numbers of credits and locked them away. Prices became distorted, and the real climate benefit was overstated.

The lesson

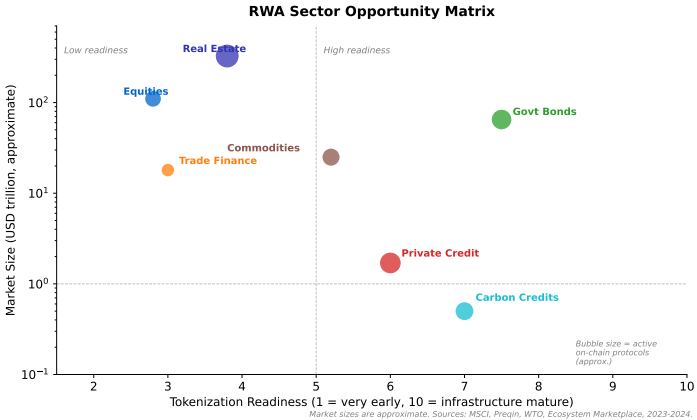
Tokenizing something can **amplify** its flaws, not only fix them.

If the underlying asset is poorly designed, a fast and easily traded token can make the damage spread faster.

Carbon is the warning sector: the design of the real asset matters just as much as the design of the token built on top of it.

Which Sector Is the Best Bet?

Put the four sectors on one map: how big the market is, against how ready it is to be tokenized today.



Government bonds are very ready but leave little room for a startup to earn. Real estate is huge but legally hard. Private credit sits in the sweet spot: a real problem, real traction, and room to build a business.

Block B Recap: Four Sectors, One Pattern

The four sectors:

- **Real estate**: fractional ownership of property
- **Private credit**: small lenders join loan pools
- **Trade finance**: funding unpaid invoices
- **Carbon credits**: the warning example

New words you now know:

- **Illiquid**: hard to sell fast without a price cut
- **REIT**: a traditional real-estate fund
- **Tranche**: a risk-and-reward layer of a pool
- **Invoice**: a bill waiting to be paid

One pattern across all four: the technology works. The catch is always legal, regulatory, or about coordination and trust.

Next: if tokenizing keeps growing, which traditional finance jobs are in danger, and who is best placed to survive?

When Tokenizing Wins, Who Loses?

An **incumbent** is a company already doing a job today, the established player.

If tokens automate parts of finance, some incumbent jobs shrink, some vanish, and some adapt and survive.

This block answers three questions: **who is most threatened**, **how do the giants respond**, and **what makes any RWA business hard to copy**?

The honest view

Tokenization is not a clean sweep. It is a reshuffle: a few jobs disappear, several change shape, and the biggest players often come out stronger.

Any incumbent faces one of three outcomes here: lose the job, adapt the job, or grow bigger because of the change. This block sorts them out.

The Jobs Most at Risk

These two jobs are mostly record-keeping and arithmetic, so a smart contract can do them automatically.

Transfer agent

Keeps the official list of who owns a company's shares, and processes every change. A blockchain is itself an ownership list, so this job is the most exposed.

Fund administrator

Calculates a fund's **NAV** (Net Asset Value: the worth of one share) and handles investors joining and leaving. On-chain fund logic can do this by itself.

Both jobs are valuable today, but most of what they do is exactly what a blockchain does well: keep one accurate, shared record.

Rule of thumb: if a job is mostly bookkeeping, a smart contract threatens it. A fund's NAV is just bookkeeping with a calculator.

The Jobs That Adapt Instead

Not everyone is replaced. These two jobs change shape but keep a role, because they rest on trust and relationships, not only bookkeeping.

Prime broker

A bank service that lends to large investors and settles their trades. Tokens make settlement instant, but the lending and the client relationships survive.

Custodian

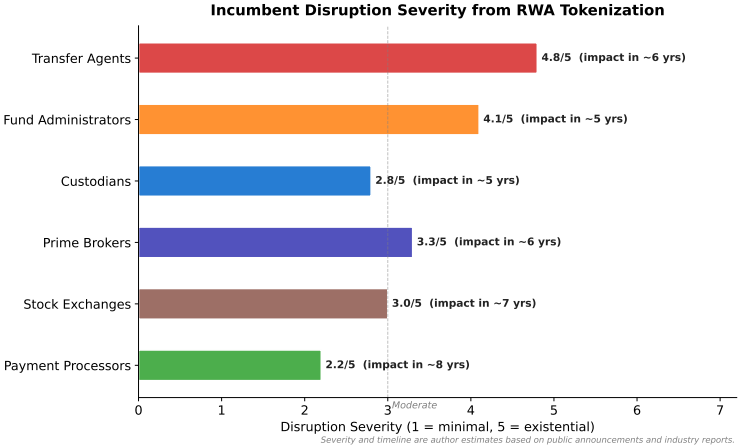
The trusted institution that safe-keeps assets for clients. Custodians are not vanishing; they are adding digital-asset custody. Licences, insurance, and trust are hard to copy.

The dividing line: jobs built on **record-keeping** are exposed; jobs built on **trust and licences** adapt and often grow.

First hint of the moat idea: a licence and a trusted name protect a business in a way that software cannot.

Disruption Map: Who Is Most Exposed

One picture ranks the traditional finance jobs by how strongly tokenization threatens each one.



Transfer agents and fund administrators face the most complete replacement. Custodians and exchanges sit safer, protected by regulation and trust.

How the Giants Fight Back: Co-Option

Co-option means that instead of fighting a new technology, a large incumbent adopts it and runs it themselves.

JPMorgan Kinexys
A bank running its own tokenized settlement, moving more than $1 billion a day.

BlackRock BUIDL
The largest asset manager launched a tokenized fund. It grew past $2.9 billion.

Franklin BENJI
A long-established fund manager put a money-market fund onto a blockchain.

The pattern: the giants are not being pushed aside. They are choosing to **become the infrastructure** themselves.

For a startup, the question is not "how do we beat BlackRock?" but "which niche will BlackRock not bother to serve?"

Four Kinds of RWA Startup

If the giants take the centre, where can a startup win? There are four standard shapes of RWA business.

Token tools
builds token-making software for other companies

Origination
finds real assets and loans and brings them on-chain

Marketplace
a licensed venue to buy and sell tokens after issue

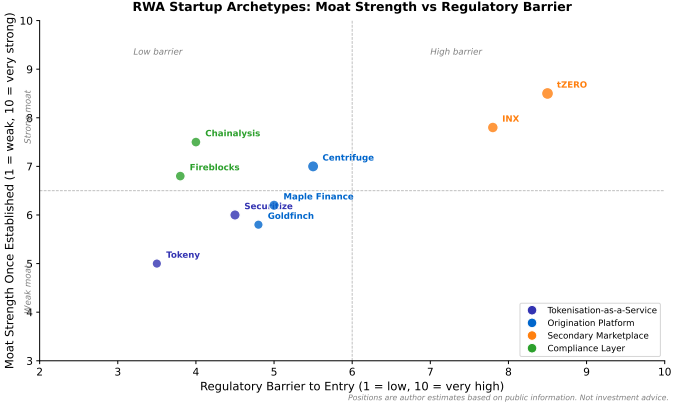
Compliance
runs the identity checks everyone else needs

Each shape earns money differently, and each is easy or hard to copy. The next slide compares them.

“Token tools” is often called tokenization-as-a-service. “Origination” is the asset-finding business. The four jobs matter more than the labels.

The Archetypes Compared

The four shapes differ on two things that decide success: how hard the rules are to enter, and how easily a rival can copy you.



A licensed marketplace is hard to start but almost impossible to copy. A pure token-tools company can be cloned in weeks. That gap is what the next slides explain.

What Is a Moat?

A **moat** is anything that makes a business hard for competitors to copy or attack. The word borrows from the water ditch dug around a castle to keep enemies out.

A good product is not a moat: rivals can build a good product too.

A real moat is something a rival **cannot** simply recreate: a hard-won licence, a trusted name, deep relationships, or being the place where all the buyers and sellers already are.

The test question

For any RWA business, ask:

"If a rival copied all of their software tonight, would the business still be safe tomorrow morning?"

If yes, there is a real moat.

Moat is the most important business word in this lecture. The next two slides are about which moats are real and which only look real.

Fork-Resistance and the Licence Moat

Fork-resistance asks one thing: if a competitor copied your code and launched the same product, would you still be safe?

Open-source code can be **forked** (copied and relaunched) by anyone within days. So code by itself is never fork-resistant.

The strongest fork-resistant moat is a **regulatory licence**: official permission to do a regulated job. It takes years and large sums to obtain, so it cannot be copied overnight.

Two licences to know

Broker-dealer: official permission to arrange sales of financial securities.

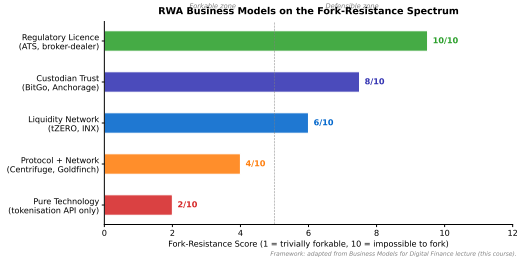
ATS licence (Alternative Trading System): permission to run a venue where securities are traded.

Each takes 1 to 2 years and heavy legal cost to win.

A startup holding a licence owns something BlackRock's engineers cannot copy by writing code. That is why licences are the deepest moat in RWA.

The Moat Ladder: What Can and Cannot Be Copied

Rank the moats from strongest (hardest to copy) down to weakest. Notice that pure technology sits at the bottom.



- **Regulatory licence**: strongest, years to obtain
- **Trusted custodian network**: clients do not switch lightly
- **Network effect**: buyers and sellers gather where the others already are
- **Pure technology**: weakest, copied within days

A network effect means a service grows more useful as more people use it, so the busiest marketplace keeps getting busier. In RWA the moat is almost always a licence or relationships, rarely the code.

Block C Recap: Losers, Fighters, and Moats

What we covered:

- Record-keeping jobs (transfer agent, fund administrator) are most at risk
- Trust-based jobs (prime broker, custodian) adapt and survive
- Giants co-opt: they become the infrastructure
- Four startup shapes, each easy or hard to copy

New words you now know:

- **Incumbent**: the established company in a job
- **NAV**: the value of one fund share
- **Moat**: what makes a business hard to copy
- **Fork-resistance**: safety even if your code is copied

The one lesson: in real-world assets the moat is almost always a licence or a relationship, never the software.

Next: we walk through two real businesses from end to end, then you diagnose a third one yourself.

How Do These Businesses Actually Make Money?

We have seen the sectors and the moats. Now the money question: **who pays, and who earns**?

We will study three real businesses, in three ways, so the idea sticks:

- **I do**: I walk you through Centrifuge
- **We do**: we analyse RealT together
- **You do**: you diagnose Maple Finance

The plan

Watch one example.
Work one together.
Solve one yourself.

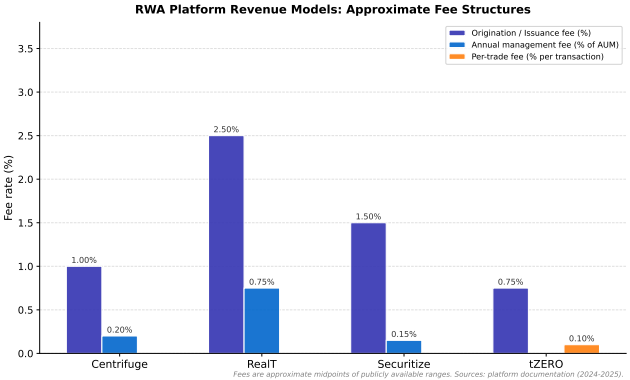
By the end you can look at any RWA company and see how it earns.

This three-step method, watch then share then solo, is how practical skills are taught well. The third step is where the learning really lands.

How RWA Platforms Earn

Most RWA platforms earn money the way an ordinary finance firm does: through **fees**, not by printing their own coin.

Two fees do most of the work: a **one-time fee** when an asset is first brought on-chain, and a small **ongoing fee** charged on the assets being managed.



A one-time fee rewards hard work done once, such as checking an asset is real. An ongoing fee is small but steady and costs almost nothing to keep collecting.

Worked Example 1: Centrifuge (I Do)

Centrifuge is a lending platform. Companies that need cash create a pool; investors supply digital money; the pool lends it out and pays interest back.

Where the money comes from:

- A fee when a new pool is launched
- An ongoing fee on the money in active pools

The lesson

Centrifuge's software is open, and rivals have copied it.

Its real moat is the **network of originators**: the companies that keep bringing real loans on-chain. Those relationships take years to build, so they cannot be forked.

Centrifuge proves the lecture's core claim in one example: the code was copyable, the originator relationships were not.

Worked Example 2: RealT (We Do)

Let us analyse **RealT** together, using what you now know.

What it offers
Own a fraction of a US rental home from about **$**50, and receive a share of the rent.

How it earns
A fee when a property is tokenized, plus an ongoing property-management fee.

Its moat
The legal company for each property and the local managers. Not the token.

The risk to watch: if regulators decide the tokens are financial securities, RealT must register each one, and the cost climbs sharply.

Notice you could fill in all three boxes yourself now. That is the point of the lecture: a repeatable way to read any RWA business.

Your Turn: Diagnose Maple Finance (You Do)

Maple Finance, the facts:

- Started 2021, lending to crypto companies
- Lost about $54 million when the FTX exchange collapsed in 2022
- Pivoted to safer, real-world loans afterwards
- Has since lent over $1 billion in total

Your task (5 minutes, groups of 3)

1. Which of the four archetypes is Maple?
2. What is its moat? What can be copied, and what cannot?
3. Where does its revenue come from?
4. What is its biggest remaining risk?

Use the words from this lecture: archetype, moat, fork-resistance, origination. Prepare a two-minute answer for the class.

Maple Finance: The Debrief

Archetype: mainly an **origination platform**. Maple finds the borrowers and runs the loan pools itself.

Moat: not the code, which is copyable. The moat is the borrower relationships and, after the 2022 pivot, a track record of safer lending.

Revenue: a fee when a pool launches, plus an ongoing fee on the money in the pools.

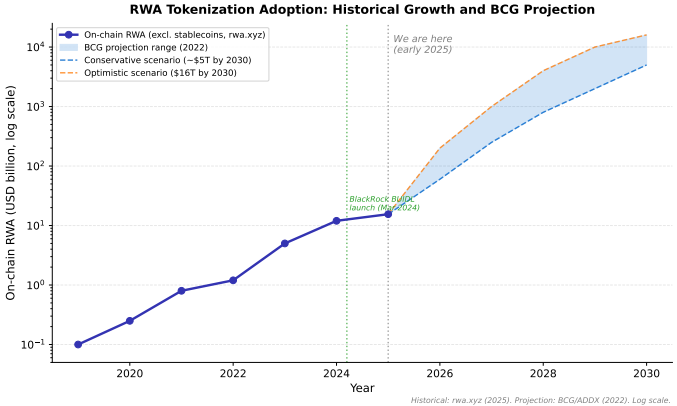
Biggest risk: regulation, if the loans are reclassified as securities, and competing on yield against giant funds like BlackRock's.

The Maple story in one line: a risky crypto-only lender almost died, then rebuilt itself as a safer real-world business.

If your group named origination, relationships, fees, and regulation, you have read a real business correctly. That is the whole skill.

Where Are We Now? The Adoption Curve

About $15 billion of real-world assets sit on-chain today. Forecasts point to trillions by 2030.



BlackRock's tokenized fund in 2024 was the signal that large institutions are now joining. We are still early, and every big shift looked tiny at the start.

The Economics: Who Is Paid to Behave Well?

A system works when everyone in it is **paid to do the right thing**. Walk through who earns what.

Originators
earn fees for bringing assets on-chain, so they want to keep finding good ones

Investors
earn a real return, so they keep supplying the money the pools lend out

Infrastructure
earns small ongoing fees, so it keeps the plumbing running

The honest catch: the rewards still rely on the custodian and the oracle being truthful. Good incentives reduce the need for trust, but they do not remove it.

This is the cryptoeconomics view: design the rewards so that honest behaviour is also the profitable behaviour. RWA manages this only partly.

What Could Break It? Four Failure Modes

Four ways an RWA business can fail. Read them, then notice what they share.

1. The asset is not really there
The custodian or oracle lies, so the token is backed by nothing. This is what happened in the Wirecard fraud.

2. The rules change
Regulators reclassify the token, and costly compliance is forced onto a running business.

3. The loans go bad
A normal credit downturn: borrowers stop repaying. A blockchain cannot prevent this.

4. The token distorts the market
As with carbon credits, easy trading can spread a flaw faster than it fixes it.

What they share: not one is a blockchain bug. They are old finance and trust problems reappearing in a new place.

Design Choices: The Big Trade-Off

A builder faces three real choices. None of them has a single right answer.

Which blockchain?

A public one (open, anyone can build on it) or a private one (more control, less openness).

Who holds the asset?

A trusted regulated custodian (simple, proven) or a more complex shared-control setup.

Licence or partner?

Get licensed yourself (slow, costly, durable) or partner with a licensed firm (fast, but dependent).

The headline: the choice that matters most is the **regulation strategy**, not the technology.

A founder who picks the blockchain carefully but ignores the licence question has solved the easy decision and skipped the hard one.

The 400 Trillion Dollar Question, Revisited

Back to the opening puzzle. After all of this, what has tokenizing real-world assets actually achieved?

Already solved

Fractional access for small investors. Fast settlement. Clear, shared records. Automatic income payouts.

Still unsolved

Legal title in most countries. The oracle and custodian trust gap. Thin resale markets. Unclear rules in some places.

The tiny share tokenized so far is not a failure. It is an early-market signal. Internet shopping was under one percent of sales in 1999, and above twenty percent by 2022.

Big shifts take 10 to 20 years. Tokenization is in its slow, foundation-laying phase, not a failure phase.

Key Takeaways

1. **An RWA is a real thing plus a token.** The token is always a **claim** on the asset, never the asset itself.
2. **The value chain has three steps**: origination, infrastructure, distribution. Winning businesses own one step deeply.
3. **The moat is almost always a licence or a relationship**, hardly ever the software. Code can be copied in days.
4. **We are very early.** The hard problems that remain are legal, regulatory, and commercial, not technical.

The builder's question to carry away: which step of the value chain can you own, and what is the moat that defends it?

This is the end of the main lecture. The Appendix that follows adds the deeper technical and regulatory detail, for anyone who wants it.

Appendix

The Technical and Regulatory Detail

The main lecture is complete. These appendix slides add the deeper detail: exact figures, regulatory specifics, and full company breakdowns. Several link back to the main slide they expand.

A1: Regulatory Licences in Detail

The licences that matter for RWA businesses:

- **US ATS** (Alternative Trading System): required to run a secondary market for security tokens. Held by tZERO, INX, Open Finance Network. Application takes 12 to 24 months.
- **US Broker-Dealer**: required to solicit securities transactions. Securitize holds one, and BlackRock used it to issue the BUIDL fund.
- **EU CASP** (Crypto-Asset Service Provider, under the MiCA regulation): required for token issuance and trading in the European Union from December 2024.
- **Swiss DLT Trading Facility**: a Switzerland-specific licence for trading DLT-based securities.

A licence is more than permission. It is a track record and a reputation with institutional counterparties that competitors cannot simply buy or copy.

Back to main slide: Fork-Resistance and the Licence Moat

A2: Centrifuge in Detail

What Centrifuge does:

- Originators (invoice financiers, property bridge lenders) create lending pools on the protocol.
- Investors supply stablecoins to a pool and earn yield from real-world credit.
- Pools are tranched: a senior tranche (lower yield, lower risk) and a junior tranche (higher yield, absorbs first losses).
- It was the first RWA protocol accepted as loan collateral inside MakerDAO, in 2021.

Revenue and moat:

- Revenue: an origination fee at pool launch, plus a protocol fee on assets in active pools.
- The protocol is open-source and has been forked; the moat is the originator network, not the code.
- In 2023 the New Silver pool saw repayment delays, showing tokenized credit faces the same cycles as ordinary credit.

Back to main slide: Worked Example 1, Centrifuge

A3: RealT in Detail

The RealT model, as a Business Model Canvas:

- **Value proposition**: fractional US residential real estate from about $50; daily rental income; global access for investors shut out of US property funds.
- **Revenue**: a one-time issuance fee at tokenization, plus an ongoing property-management fee. Revenue scales with assets held, not with trading.
- **Key resources**: one LLC (a legal company) per property; local property management; the compliance work for each US securities offering.
- **Key risks**: regulatory reclassification (registration cost then scales per property); tenant vacancy; thin resale liquidity on smaller properties.

RealT has tokenized over 500 properties. The competitive advantage is the legal entity per property and the local management network, never the token contract itself.

Back to main slide: Worked Example 2, RealT

A4: Maple Finance in Detail

Timeline:

- Founded 2021 as an institutional lending marketplace on Ethereum.
- Original model: under-collateralised loans to crypto-native firms, including Alameda Research.
- November 2022: the FTX collapse caused write-offs of about $54 million in bad loans.
- 2023 to 2024: pivoted to US Treasury bills and over-collateralised real-world loans.
- Total loan originations have passed $1 billion since launch.

Diagnosis:

- Archetype: primarily an origination platform, with a hybrid pool-delegate structure.
- Moat: borrower relationships and the post-pivot track record; the smart contracts themselves are forkable.
- Fork-resistance: roughly 5 to 6 out of 10, and clearly stronger after the pivot than before it.

Back to main slide: Diagnose Maple Finance

A5: The Four Archetypes, with Real Companies

- **Tokenisation-as-a-service**: issues tokens for third-party asset owners and earns per issuance. Examples: Securitize, Tokeny, Polymath.
- **Origination platform**: directly originates credit or acquires assets to tokenize, and earns on pool performance. Examples: Centrifuge, Maple Finance, Goldfinch.
- **Secondary marketplace**: a licensed venue for trading security tokens after issue, earning per trade and on listing fees. Examples: tZERO, INX, Open Finance.
- **Compliance layer**: identity and anti-money-laundering checks for the whole ecosystem, earning recurring fees. Examples: Chainalysis, Fireblocks, Onfido.

The four differ sharply in regulatory burden and in how easily a competitor can copy them. A licensed marketplace is hard to enter but nearly impossible to fork; a pure tokenisation tool can be rebuilt in weeks.

A6: The Design Space in Full

Three design dimensions every RWA business must decide:

- **Chain architecture**: a public permissionless chain (Ethereum, Polygon) gives maximum composability with DeFi but regulatory uncertainty; a permissioned chain gives institutional control and privacy but limited composability.
- **Custodian model**: trust a regulated custodian (simple, commercially proven) or use a trust-minimised multi-signature scheme (more complex, more auditable). Nearly all institutional RWA uses the custodian-trust model today.
- **Regulatory strategy**: regulatory arbitrage (issue in a permissive country, distribute globally; fast but risky), native compliance (register in each market; slow but durable), or co-option (partner with a licensed incumbent; the fastest route to institutional distribution).

The most consequential choice is the regulatory strategy, not the technical architecture.

A7: Failure Modes in Detail

- **Oracle failure and custodian fraud**: token value depends on off-chain verification, and no fully trustless solution exists. If an asset is falsely reported intact, the token is backed by nothing. The Wirecard fraud (1.9 billion euros of phantom cash, 2020) is the warning case.
- **Regulatory reclassification**: the 2018 to 2019 security-token boom ended when enforcement forced most projects to refund investors or delist. A retroactive reclassification forces costly compliance mid-operation.
- **Credit cycle risk**: Goldfinch saw emerging-market borrower defaults in 2023, and Centrifuge's New Silver pool had repayment delays. On-chain transparency makes defaults more visible, not less likely.
- **Market distortion**: KlimaDAO accumulated carbon-credit reserves without retiring them, inflating its stated climate impact and distorting voluntary carbon prices.

Historical RWA failures come from credit underwriting, regulatory misclassification, and custodian trust failures, not from smart-contract bugs.

Back to main slide: What Could Break It

A8: The Cryptoeconomics Lens, Fully Applied

Incentives: originators earn fees for bringing assets on-chain; investors earn real-world yield without traditional-finance accounts; infrastructure providers earn recurring fees on ecosystem volume; regulators support tokenization when it improves transparency and resist it when it enables arbitrage.

Value flow: the asset owner receives upfront liquidity or a broader investor base; the platform captures origination and management fees; the investor receives real cash-flow yield minus fees; most RWA protocol tokens do not distribute fees directly to token holders.

Security model, three trust assumptions: the custodian honestly holds and reports the asset; the oracle reports prices and status without manipulation; the legal structure actually confers the rights the token claims.

RWA economics differ from DeFi: fees are comparable to traditional finance, yield comes from real cash flows rather than token inflation, and the security model still rests on trusted parties.

A9: Data Sources and Further Reading

Live data (use these for current figures, not static reports):

- rwa.xyz: real-time on-chain RWA data by protocol and asset class.
- defillama.com: total-value-locked and protocol metrics.
- Centrifuge and Maple Finance documentation: pool-level origination and fee data.

Reports and frameworks:

- BCG and ADDX: tokenization market-size projections (2022).
- McKinsey Global Institute: tokenized-assets study (2024).
- The MiCA Regulation (European Union, 2023) and the Swiss DLT Act (2021): the clearest legal frameworks for RWA.

The RWA market moves fast. Figures in a six-month-old report may already be stale, so always cross-check against rwa.xyz.