



HYPERLEDGER

CAPITAL MARKETS SIG

Mortgage Sub-Group

Hyperledger Capital Markets SIG Mortgage Sub-Group Update



Marvin Bantugan
Blockchain
Services
Zventus



Angel Alban
Blockchain
Services
Zventus



James Hendrick
Blockchain
Services
Zventus

Thurs, November 18th | 9:00 AM PST

Zoom link:

<https://zoom.us/my/hyperledger.community.backup?pwd=dkJKdHRIc3dNZEedKR1JYdW40R2pDUT09>

HyperLedger Antitrust Policy & Code of Conduct

Linux Foundation meetings involve participation by industry competitors, and it is the intention of the Linux Foundation to conduct all of its activities in accordance with applicable antitrust and competition laws. It is therefore extremely important that attendees adhere to meeting agendas, and be aware of, and not participate in, any activities that are prohibited under applicable US state, federal or foreign antitrust and competition laws.

Examples of types of actions that are prohibited at Linux Foundation meetings and in connection with Linux Foundation activities are described in the Linux Foundation Antitrust Policy available at <http://www.linuxfoundation.org/antitrust-policy>. If you have questions about these matters, please contact your company counsel, or if you are a member of the Linux Foundation, feel free to contact Andrew Updegrave of the firm of Gesmer Updegrave LLP, which provides legal counsel to the Linux Foundation.

Hyperledger is committed to creating a safe and welcoming community for all. For more information please visit our [Hyperledger Code of Conduct](#)

Meeting Agenda

- ❑ Welcome & Meeting Housekeeping
- ❑ Hyperledger Foundation Introduction
- ❑ State of Blockchain in the Global Mortgage Industry
- ❑ Mortgage Industry Subgroup Introduction
- ❑ Mortgage Blockchain Lab - Internship Pilot Update
- ❑ Next Steps
- ❑ Q & A



HYPERLEDGER

Karen Ottoni

Director of Ecosystem at Hyperledger



The Mortgage Blockchain Opportunity

At the heart of financial services is trust and, as an industry, we rely on our technology to record the truth of each transaction.

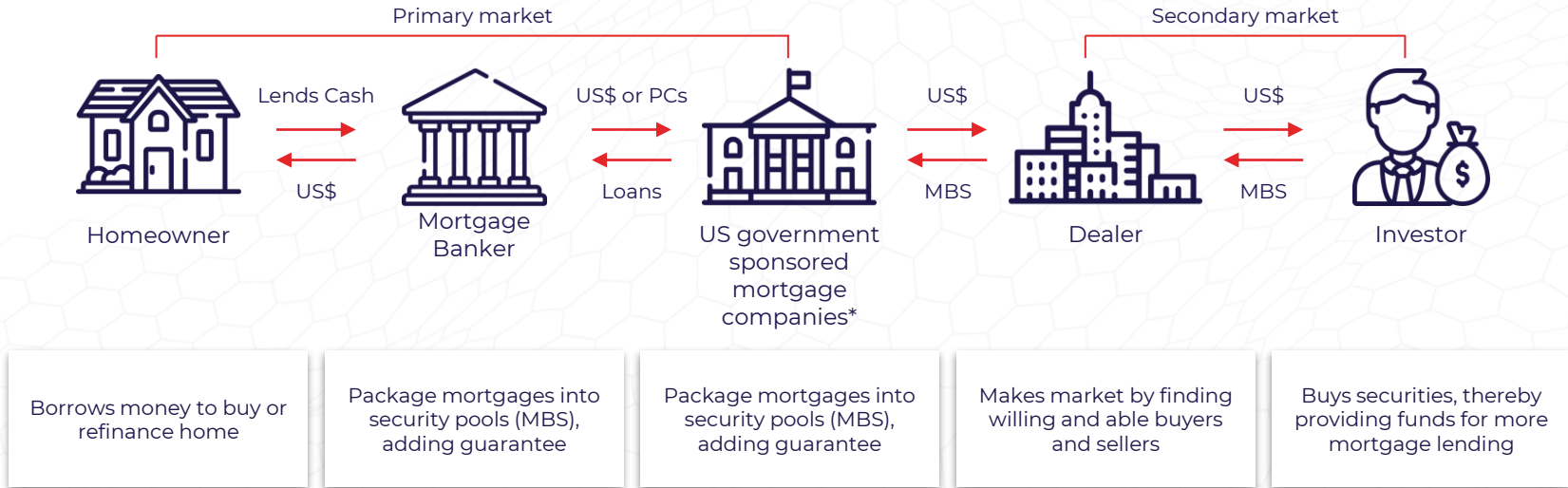
The life cycle of a mortgage has a complex framework, involving many entities, for example originators, servicers, investors, regulators, and a vast ecosystem of vendors and service providers. This complexity creates trust issues and transparency challenges with no clear mechanism to track end-to-end activities of every entity.

Each party must maintain their own independent database of customer information, loan transactions, and third party information. Data must be validated, re-validated and financial transactions need to be reconciled with third parties.

Blockchain can address many issues in the lifecycle of a mortgage with its decentralized and distributed ledger technology, with trustless operability, that is immutable and auditable.

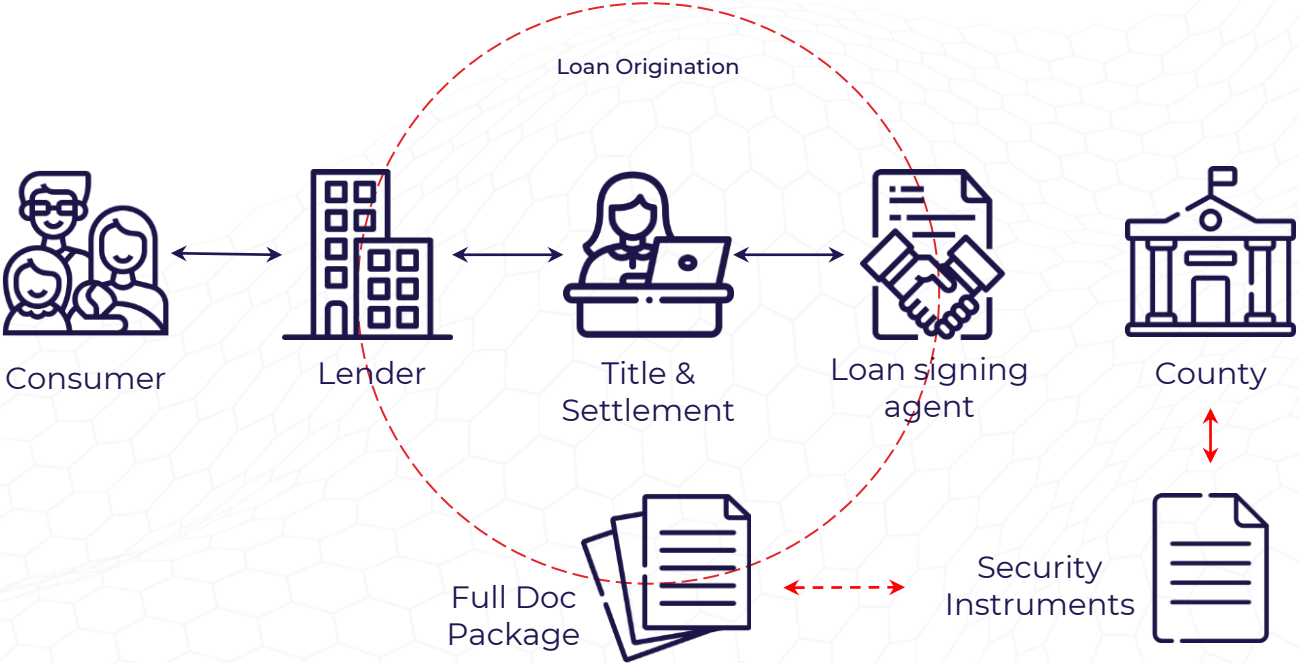
US Mortgage: Mortgage Backed Securities Flow of Funds

US government-sponsored enterprises (GSEs) Freddie Mac and Fannie Mae are publicly-traded corporations that securitise residential mortgages and sell them to investors as mortgage-backed securities (MBS).



*The Federal National Mortgage Association or Fannie Mae (FN), The Government National Mortgage Association or Ginnie Mae (GNMA) Federal Home Loan Mortgage Corporation or Freddie Mac (FHLMC)

US Mortgage: Security Instruments and Recording Landscape



State of Blockchain in the Global Mortgage Industry



Global Mortgage Blockchain Activity

Global

2018
China | Bank of Communications issues blockchain mortgage

2018
Hong Kong | Bank of China (Hong Kong) blockchain mortgage valuations

2020
Russia | A subsidiary of the Raiffeisen Bank Intl. announces blockchain mortgage project

2021
Spain | New bill to allow crypto for mortgage purchase and payments

USA

2014
USA | FACTOM blockchain mortgage technology (released 2018)

2018
USA | Figure blockchain Home Equity loans

2018
USA | Fluidity (acquired by ConsenSys) blockchain mortgage technology

2018
USA | Liquid Mortgage post-origination mortgage ecosystem

2021
USA | Riverside County, California blockchain mortgage records

2021
USA | Ginnie Mae announces blockchain project, Fannie Mae accepts Crypto for down payments*

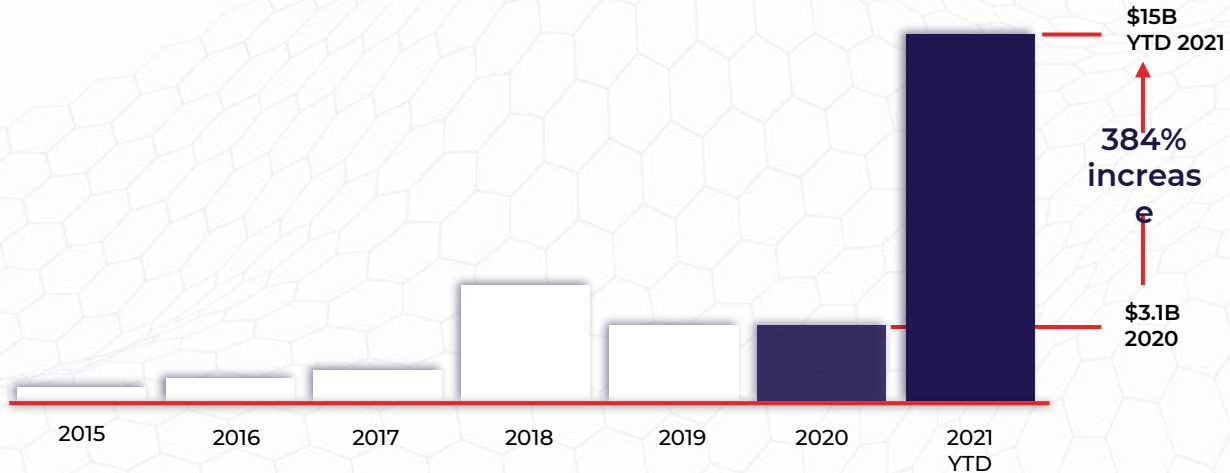
*Requires it to be converted into U.S. dollars and in an account for at least two months with documentation.

Note: For illustration purposes, select sample



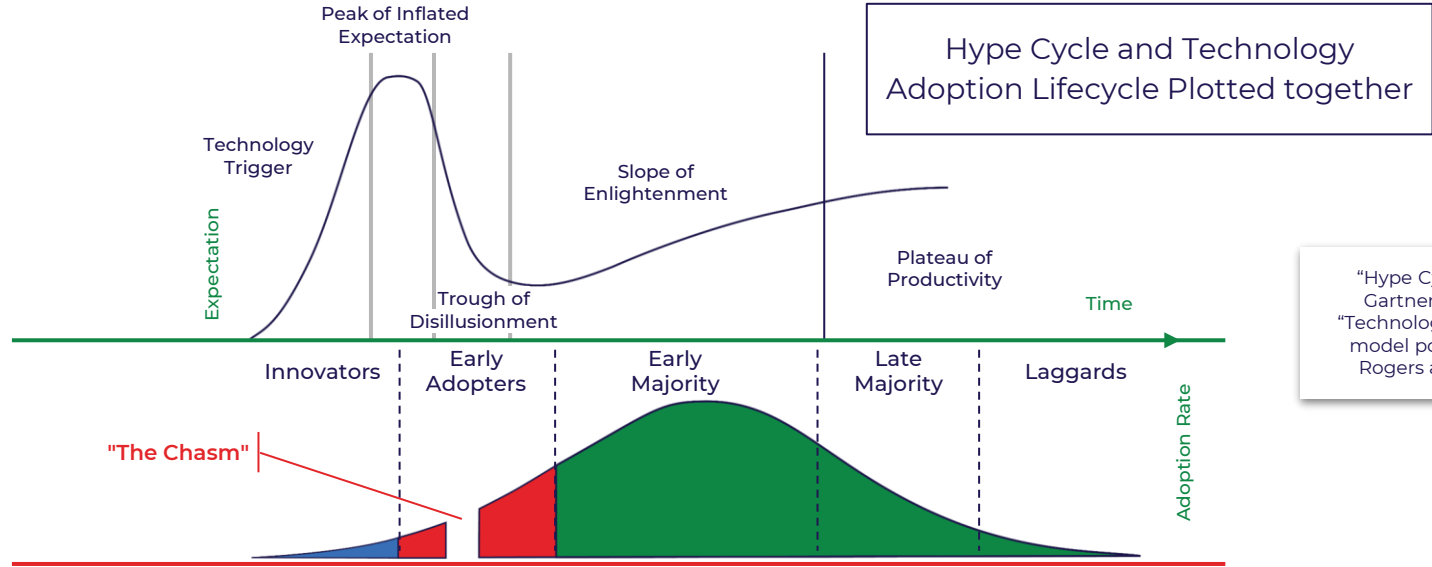
Global Blockchain Investment Trends

Global Blockchain investment soars to reach \$15B in first 9 months of 2021



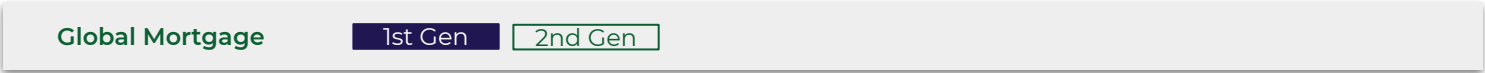
Source: CB Insights

Global Mortgage Blockchain Adoption - Where are we?

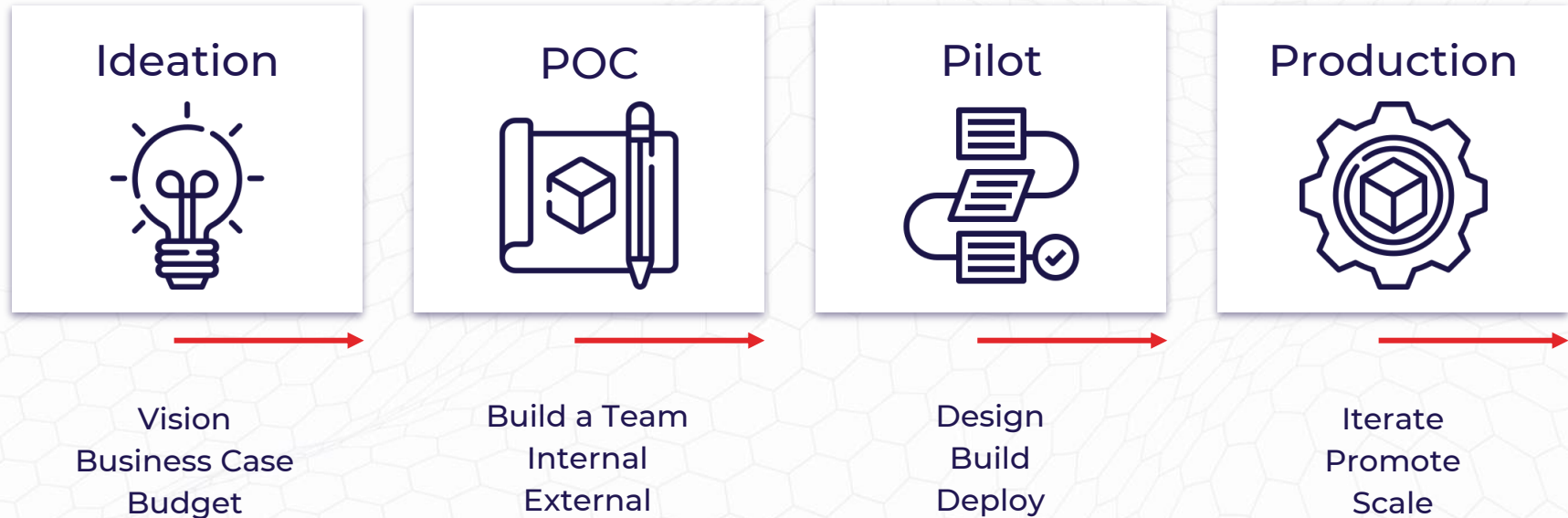


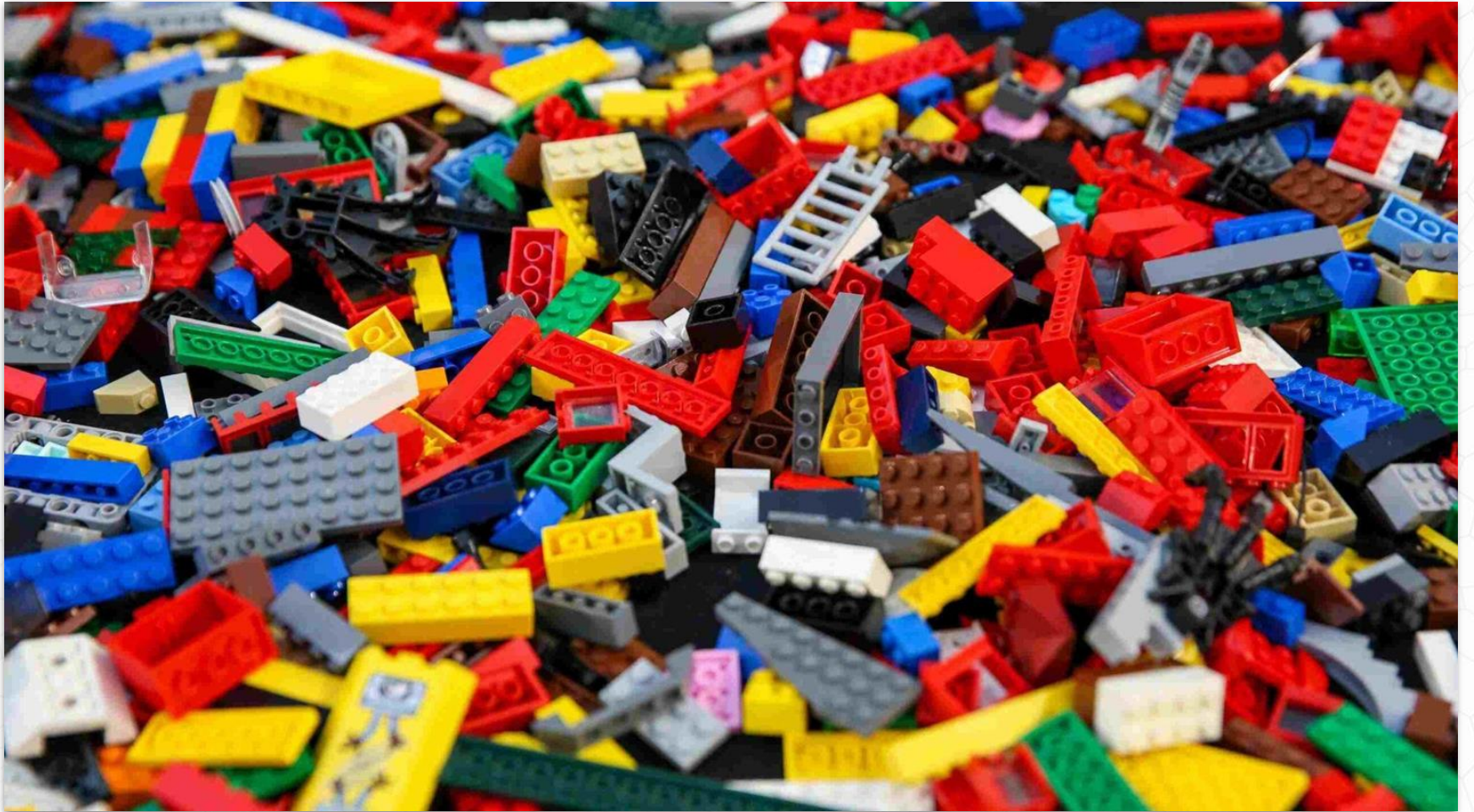
Hype Cycle and Technology Adoption Lifecycle Plotted together

“Hype Cycle” model used by Gartner since 1995 and the “Technology Adoption Lifecycle” model popularized by Everett Rogers and Geoffrey Moore.



The Blockchain Journey (Driving Adoption)







Mortgage Industry Subgroup

Mortgage Industry Subgroup Charter

Purpose

To foster sustainable, inclusive communities through efficient, fair, and quality mortgage lending around the globe.

Vision

To securely close home loans as efficiently as an auto loan while delivering a superior digital customer experience.

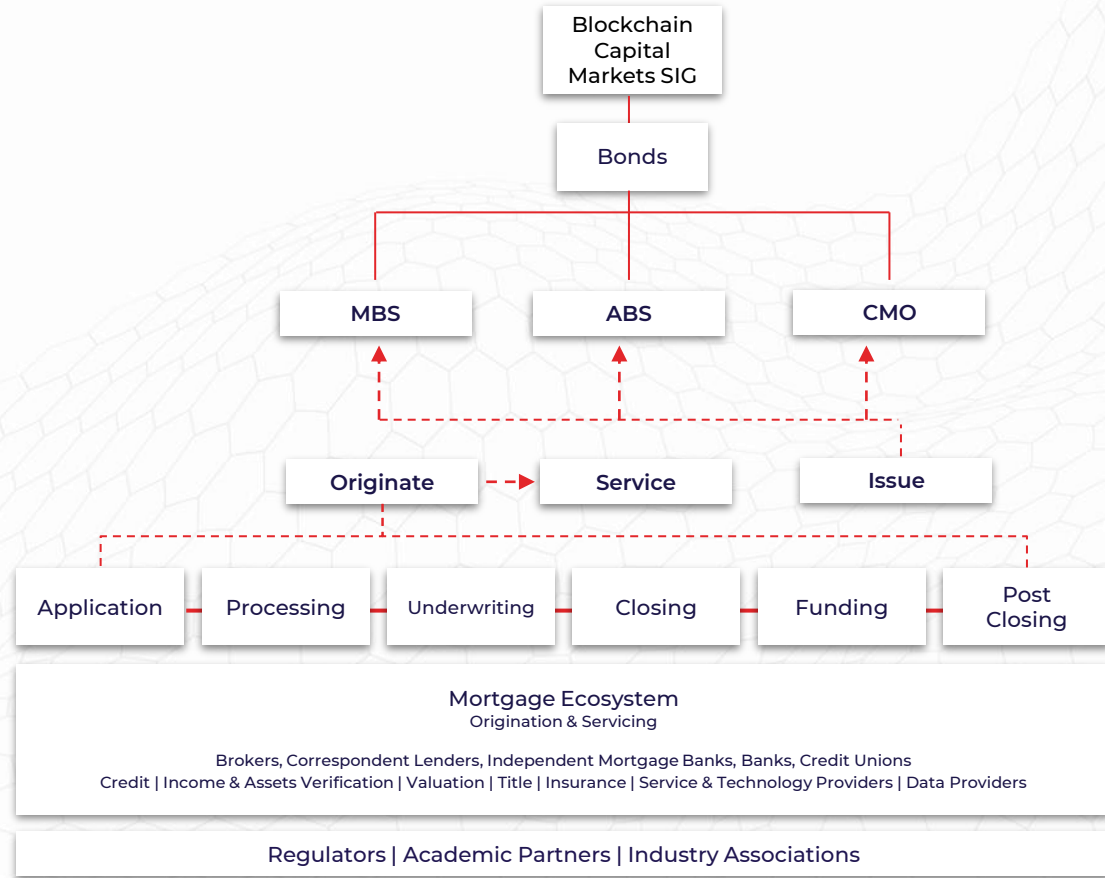
Mission

To educate mortgage lenders, vendor partners, investors, real estate records custodians, and government agencies around the globe of production-ready blockchain technologies that support the global housing mission of creating sustainable, inclusive communities through efficient, fair, and quality mortgage lending.

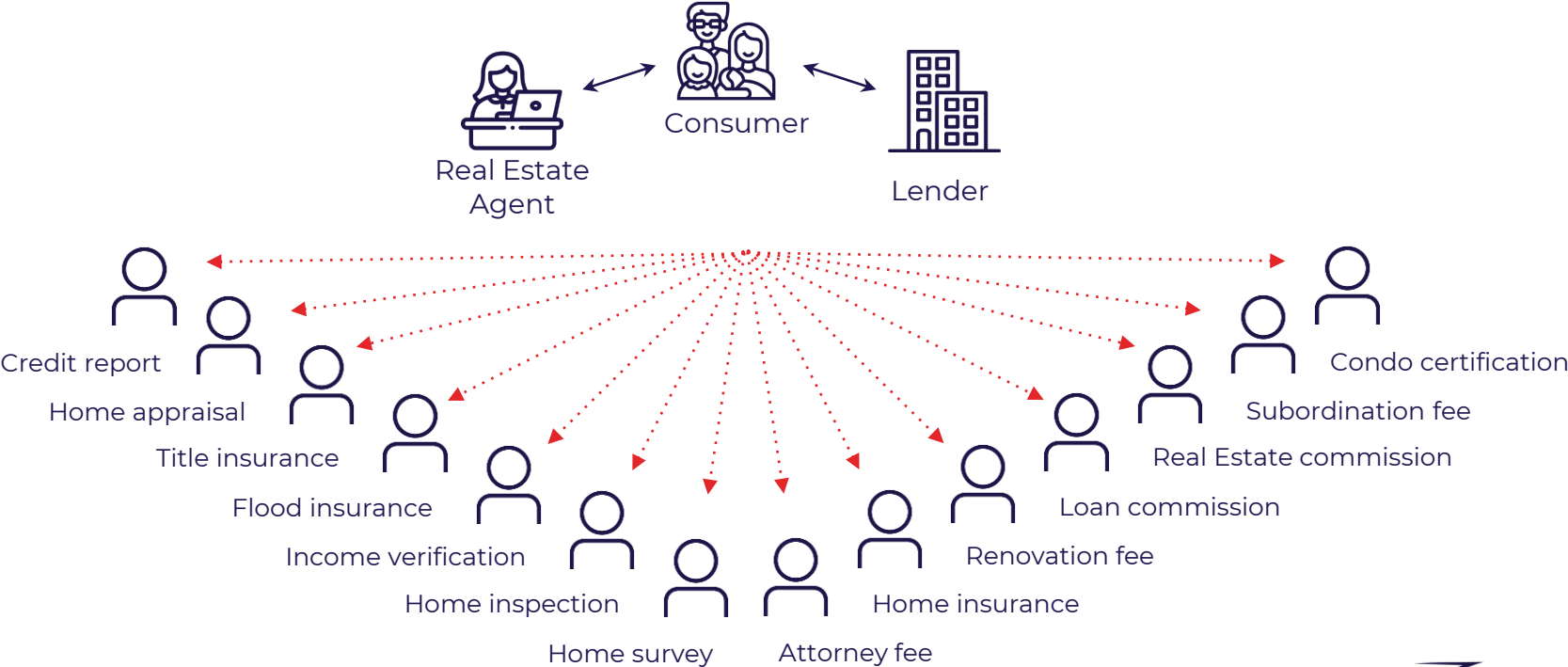
<https://wiki.hyperledger.org/display/CMSIG/CMSIG+Mortgage+Industry+Subgroup>

Mortgage Subgroup Landscape

Capital Markets SIG
relationship to Mortgage
Origination & Servicing



US Mortgage: Loan Origination Actors (select sample)



Scope

Education



Communication



Networking



Use Cases



<https://wiki.hyperledger.org/display/CMSIG/CMSIG+Mortgage+Industry+Subgroup>

Meeting Cadence

- ❑ The Mortgage Subgroup will plan on meeting monthly on the second Thursday of each month.
- ❑ Due to US holiday season, there will be no December meeting, but we commence this cadence in January 2022.
- ❑ The meetings will be at 9 am Pacific / 12 pm Eastern / 6 pm Central European.

<https://wiki.hyperledger.org/display/CMSIG/CMSIG+Mortgage+Industry+Subgroup>



Mortgage Blockchain Lab
Update



Mortgage Blockchain Lab

| | Private | Public |
|-----------|-----------------------------------|-------------------------------------|
| Education | Enterprise | University Partners Associations |
| R&D | POCs Pilots | POCs Pilots |
| Services | Design Build Implementation | Design Build Implementation |

Blockchain University Program

Mortgage Blockchain Lab Members



Maria Barahona

Systems Engineering Student

*Universidad Nacional
Autónoma de Honduras*



Guillermo Hernandez

Systems Engineering Student

*Universidad Nacional
Autónoma de Honduras*

Blockchain University Program

Universidad Nacional Autónoma de Honduras Overview

- ❑ Systems Engineering Students
 - ❑ Architecture of Hotel Lighting and Access Control
 - ❑ Purchase Department Management
- ❑ Knowledge:
 - ❑ Math & Physics
 - ❑ Networks, Software Development, IT Security, IT Department Management



Blockchain Sandbox Update

- ❑ Multiple technologies
- ❑ Hyperledger Fabric
- ❑ Cloud infrastructure
- ❑ Smart contract samples:
 - ❑ Fabcar, asset-transfer basic, test-network
- ❑ Multiple programming languages



HYPERLEDGER



Next Steps

Continue Outreach

Private/Public
Companies



Academic Institutions



Regulatory Entities



Future Agenda Items

Business Case



Demos



Technical



Use Case



Knowledge share



Regulators



Q & A

Join the Mortgage Industry Subgroup

<https://wiki.hyperledger.org/display/CMSIG/CMSIG+Mortgage+Industry+Subgroup>

Step 1: Create your Linux Foundation ID (LFID) to edit our wiki pages and chat on Hyperledger channels. Video Link available with instructions.

Step 2: Join the conversation by subscribing to the Hyperledger Capital Markets Special Interest Group mailing list which is where the Mortgage Subgroup activities take place. Link available to join the mailing list.



HYPERLEDGER

Thank you!

Angel Alban aalban@zventus.com

Marvin Bantugan mbantugan@zventus.com

James Hendrick jhendrick@zventus.com