

The background features a vibrant blue gradient with subtle, wavy horizontal lines. In the bottom right corner, there is a colorful abstract shape with shades of purple, pink, and orange. The AWS logo is positioned on the left side of the main title.

# aws SUMMIT

INDIA | MAY 25, 2023

ETECH006

# Financial asset tokenization using managed blockchain

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Senior Technical Account Manager  
AWS India

**Calvin Koonamplakkal Paulson**  
Director of Engineering  
Fidelity Investments



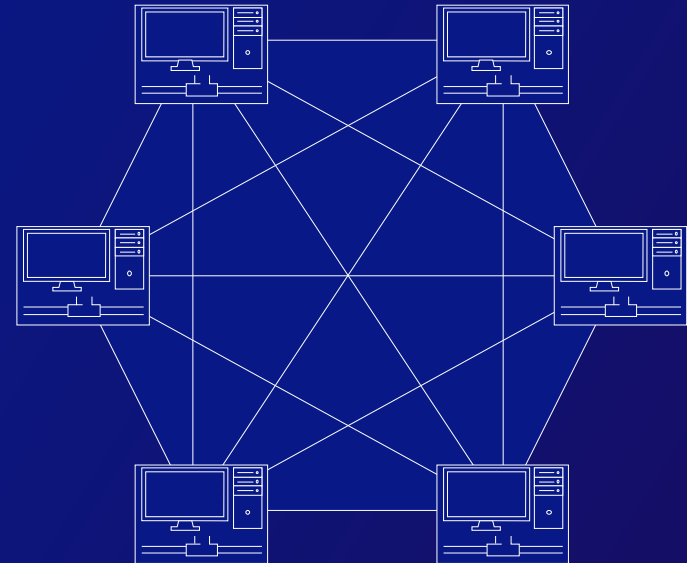
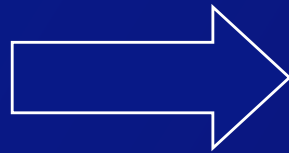
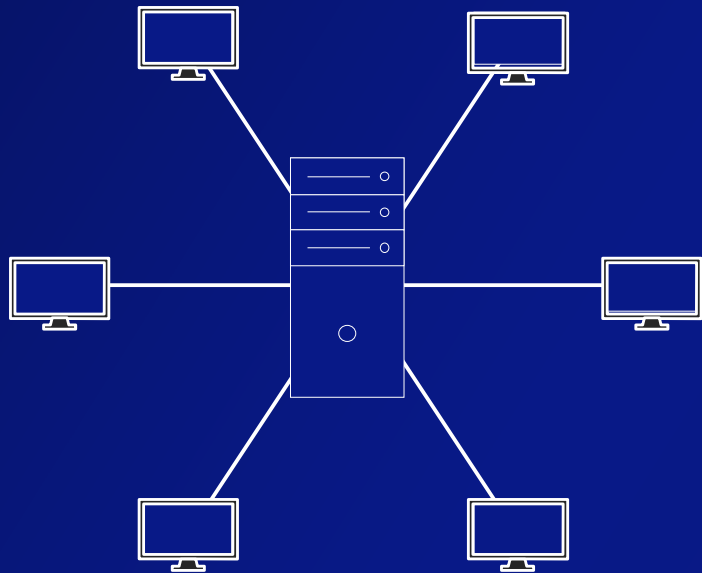
# Agenda

- Introduction to Blockchain
- Tokenization & Industry landscape
- Building the capability stack
- Smart contract development
- AWS Managed Blockchain
- Tokenization framework design
- Learnings & Experience

# Blockchain

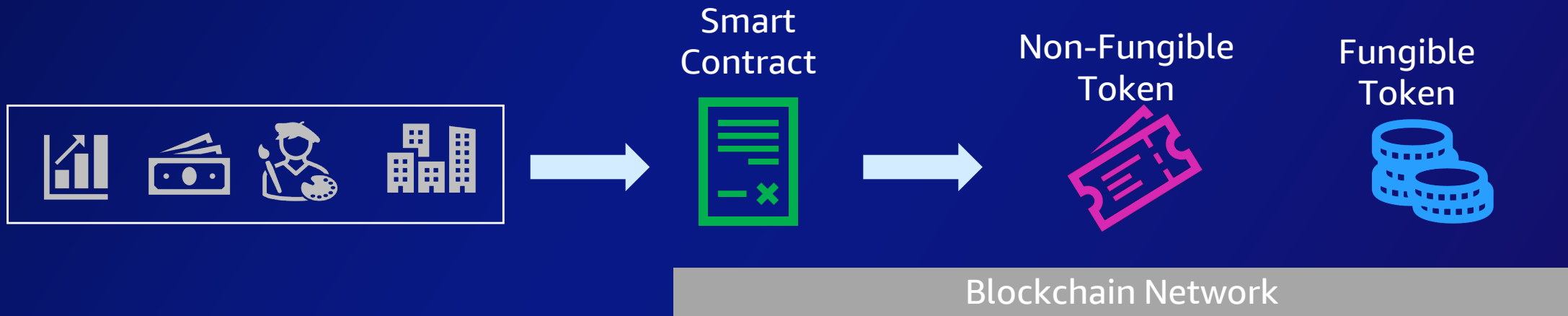
Eliminates the need for central authority in business networks with three main components:

**Distributed ledger**, **Consensus mechanism**, and **Smart contracts**



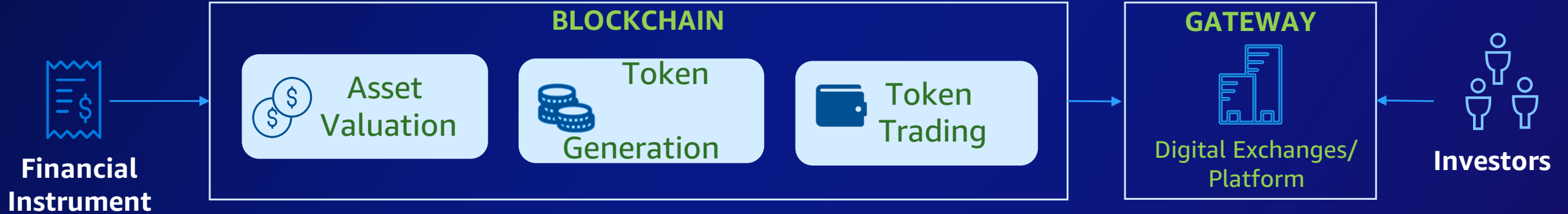
# Smart contracts

Not just Cryptocurrencies, but more.



# Tokenization

A token is **digital representation of an asset**, that signifies ownership and value of the asset



## Benefits



**New Sources of Revenue**



**Broader Investor Base**



**Operational Efficiencies**



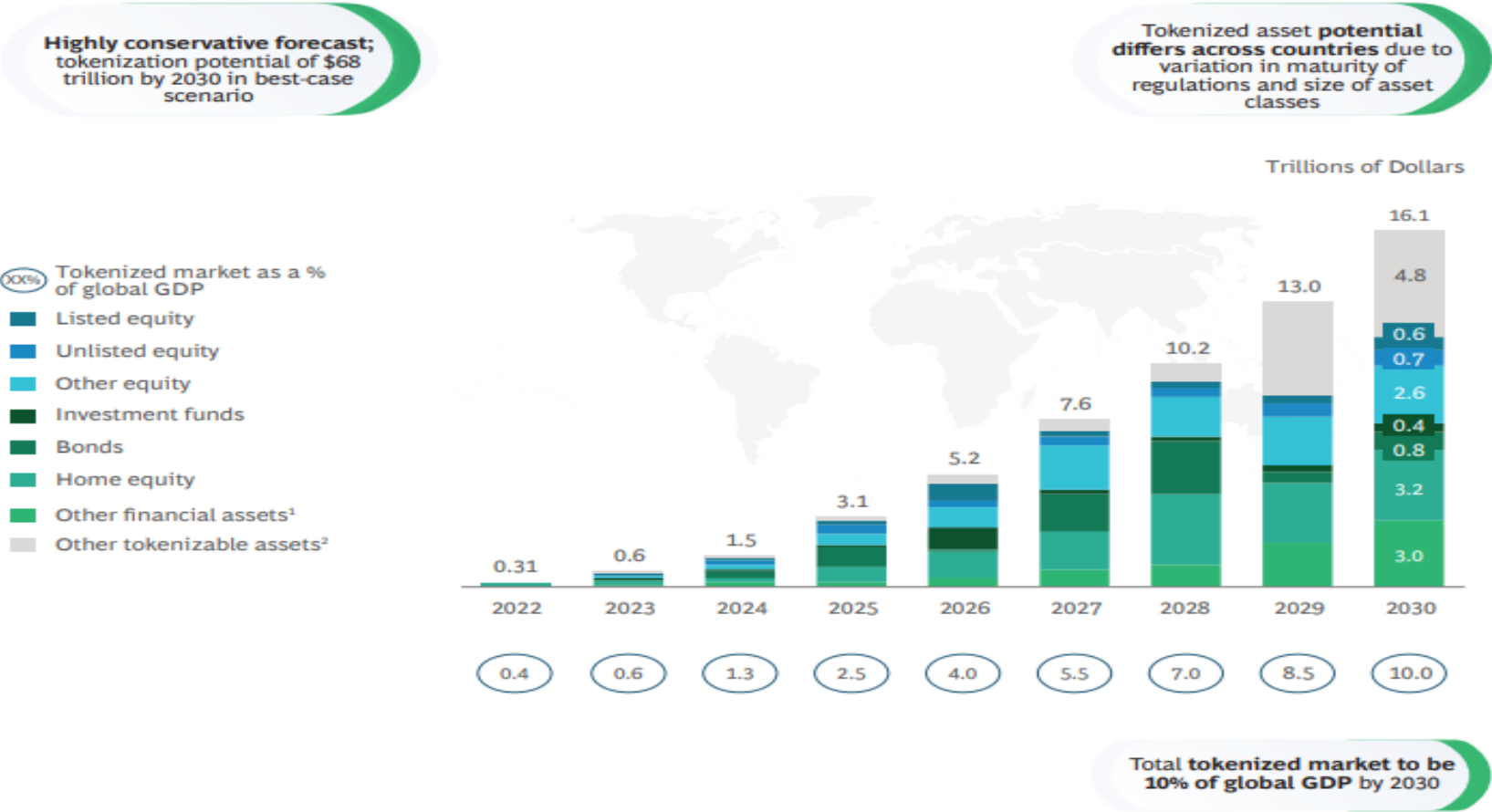
**Reduce Settlement Time**



**Geographic Reach**

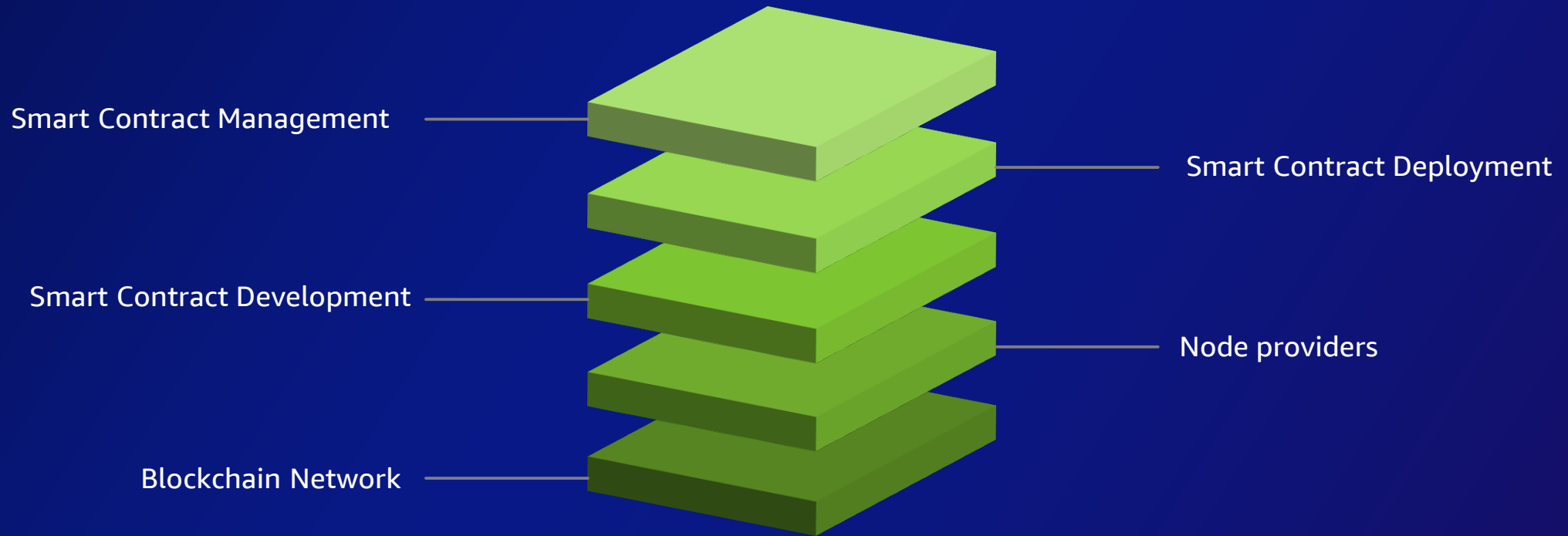
# Industry landscape

Tokenization of global illiquid assets estimated to be a \$16 Trillion business opportunity by 2030



Source: World Economic Forum – Global Agenda Council, BCG Analysis  
<sup>1</sup> For example, Insurance policies, Pensions, Alternative Investments; <sup>2</sup> e.g., Infrastructure Projects, Car Fleets, Patents  
Note: The analysis does not include crypto assets

# Fidelity Investments' tokenization capability stack





# Smart contract development



Programming  
Language



Leverage  
OpenSource



Token  
Standards



Design Patterns



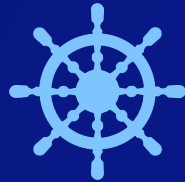
Tests



Code Analysis



Smart Contract  
Events



Admin Control

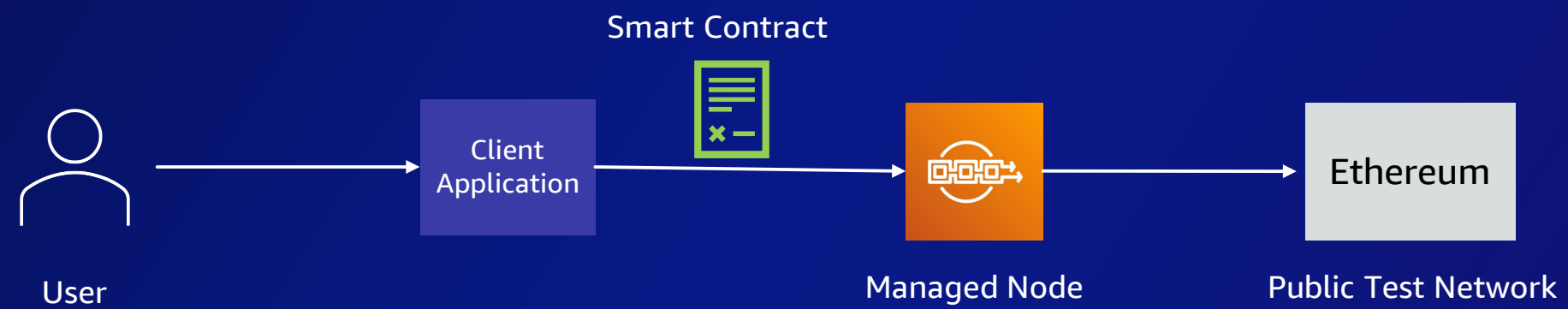


Role  
Management



On Chain – Off  
Chain integration

# Onboarding to managed node



Existing Ecosystem on AWS



# Challenges with setting up nodes on blockchain

# Challenges with setting up nodes on blockchain



**Setup is hard**

# Challenges with setting up nodes on blockchain



**Setup is hard**

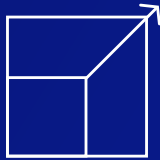


**Hard to scale**

# Challenges with setting up nodes on blockchain



Setup is hard



Hard to scale



**Complicated  
to manage**

# Challenges with setting up nodes on blockchain



Setup is hard



Hard to scale



Complicated  
to manage



**Expensive**

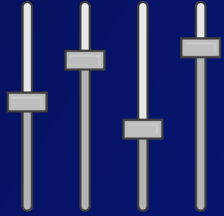
# What is Amazon Managed Blockchain?



Amazon Managed Blockchain is a fully managed service that makes it easy to create and manage scalable blockchain networks using popular open-source frameworks:  
**Hyperledger Fabric and Ethereum**



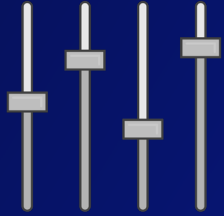
# Amazon Managed Blockchain features



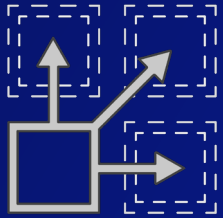
## Fully managed

Create a blockchain network in minutes

# Amazon Managed Blockchain features

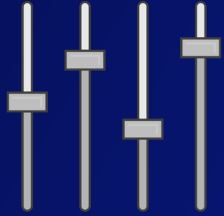


**Fully managed**  
Create a blockchain  
network in minutes

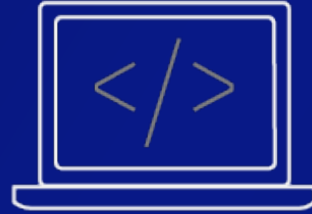


**Reliable & scalable**  
Backed with Amazon  
technology

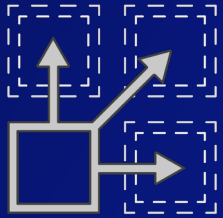
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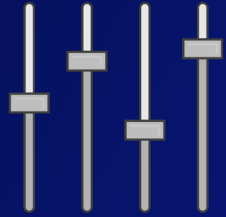


**Open-source variety**  
Support for two frameworks

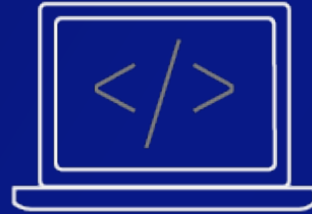


**Reliable & scalable**  
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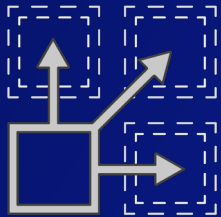
# Amazon Managed Blockchain features



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Create a blockchain network in minutes



**Open-source variety**  
Support for two frameworks

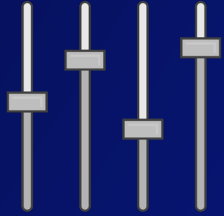


**Reliable & scalable**  
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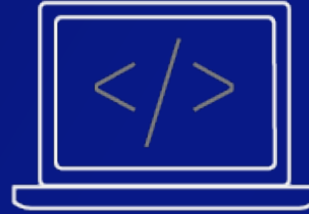


**Low cost**  
Only pay for resources used

# Amazon Managed Blockchain features



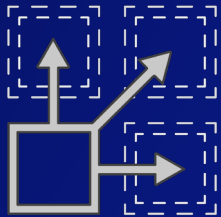
**Fully managed**  
Create a blockchain network in minutes



**Open-source variety**  
Support for two frameworks



**Decentralized**  
Democratically govern the network

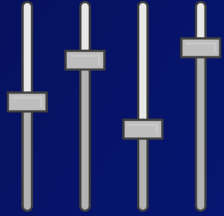


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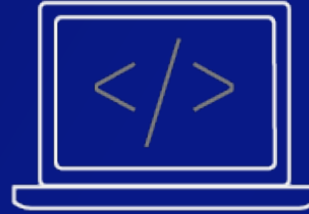


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# Amazon Managed Blockchain features



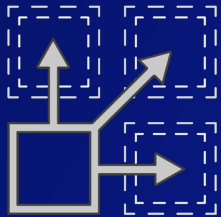
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Support for two frameworks



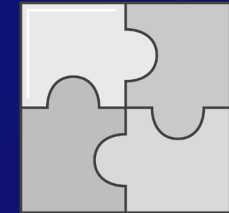
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**Reliable & scalable**  
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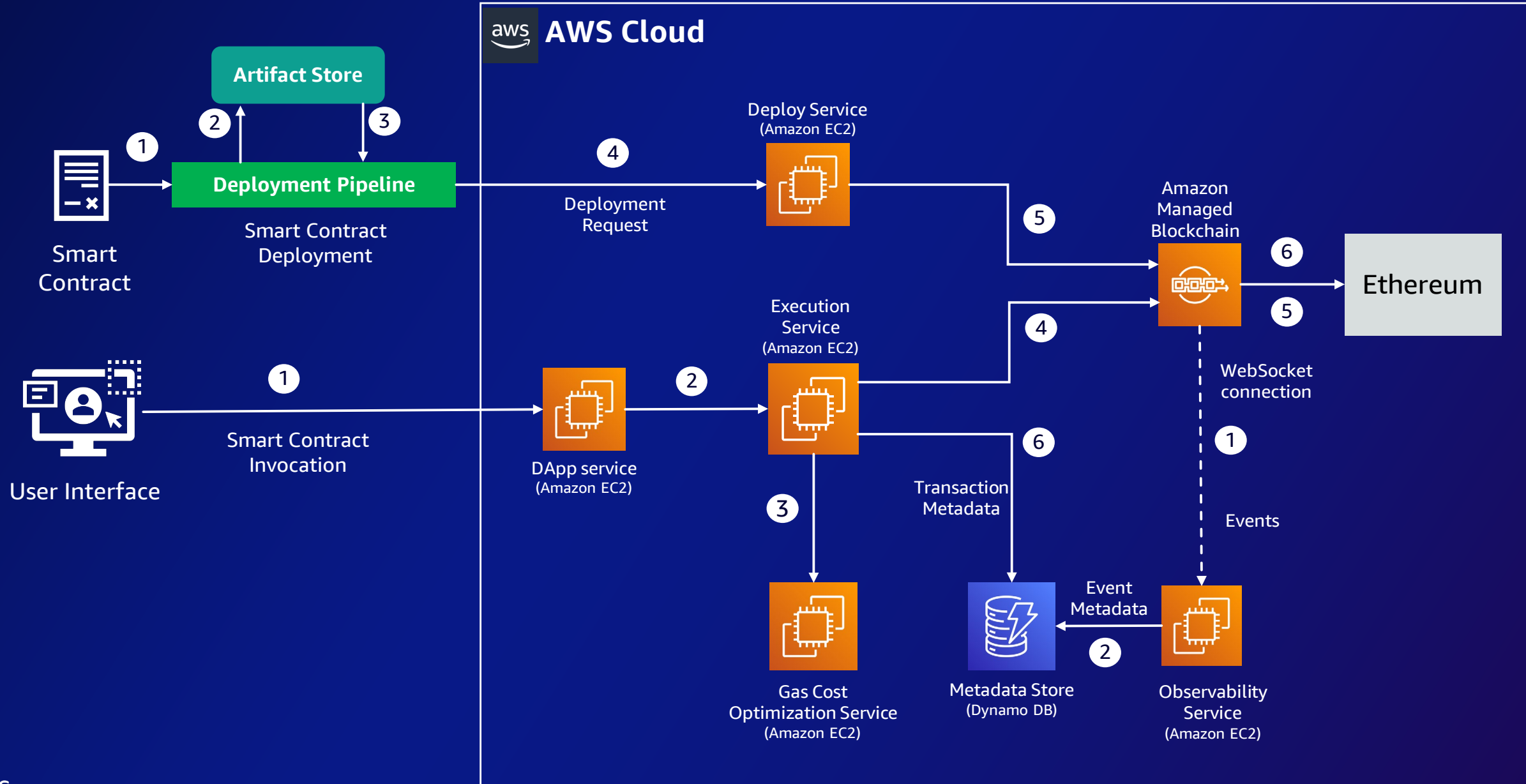


**Low cost**  
Only pay for resources used



**Integrated**  
Easily use with AWS services

# Fidelity Investments' tokenization framework design



# Learning



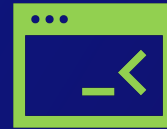
Learn &  
Experiment



New Technology



Share



Contribute



# Experience



Customer  
First



Innovate



Talent



We are ONE



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Build in-demand cloud skills *your way*



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# Thank you!



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