

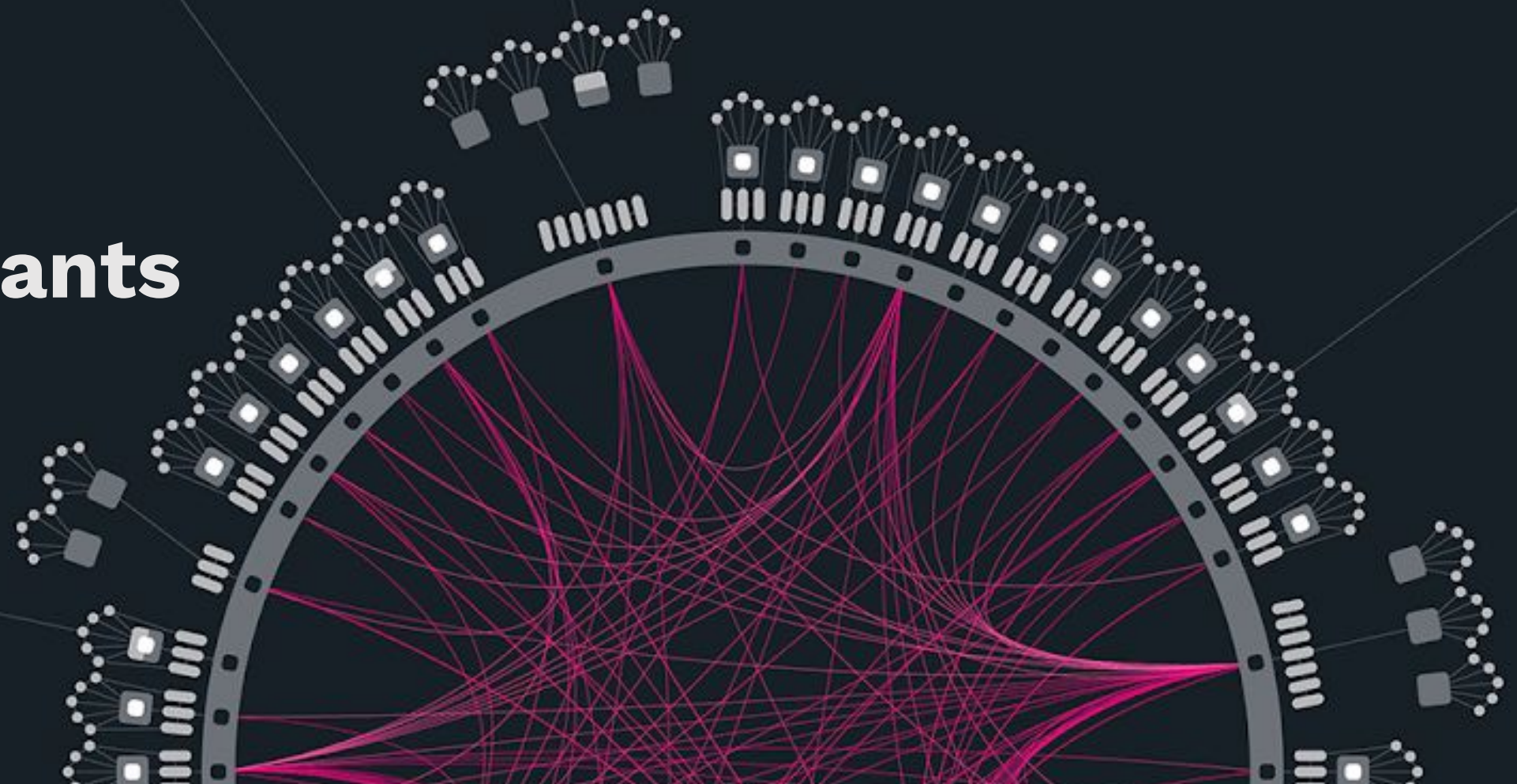
*Polkadot.*

# A Quick Introduction to Polkadot

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## **Bill Laboon**

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Bill Laboon is the Head of Education and Grants at the Web3 Foundation. Before this, he was a lecturer in the Computer Science Department of the University of Pittsburgh, teaching courses in software quality assurance, software engineering, and blockchain technology. He is a frequent speaker at conferences on a variety of topics, including cryptocurrency, software quality, and the ethics of software development. He is the author of two books: *A Friendly Introduction to Software Testing*, an undergraduate textbook; and *Strength in Numbers*, a near-future novel set in a world in which cryptocurrency has eliminated traditional money. Bill has a BS in Computer Science and Political Science from the University of Pittsburgh, as well as an MS in Software Design & Management from Carnegie Mellon University.



# LEGACY BLOCKCHAINS HAVE VARIOUS LIMITATIONS



## CAN'T COMMUNICATE

Legacy blockchains can't easily communicate with each other



## CAN'T SCALE

These networks can't handle a lot of traffic



## POOR SECURITY

Many networks have been attacked by hackers



## NO CUSTOMIZATION

One-size-fits-all application platforms do not work



## POOR GOVERNANCE

Decisions on many legacy networks are made by one powerful individual or group

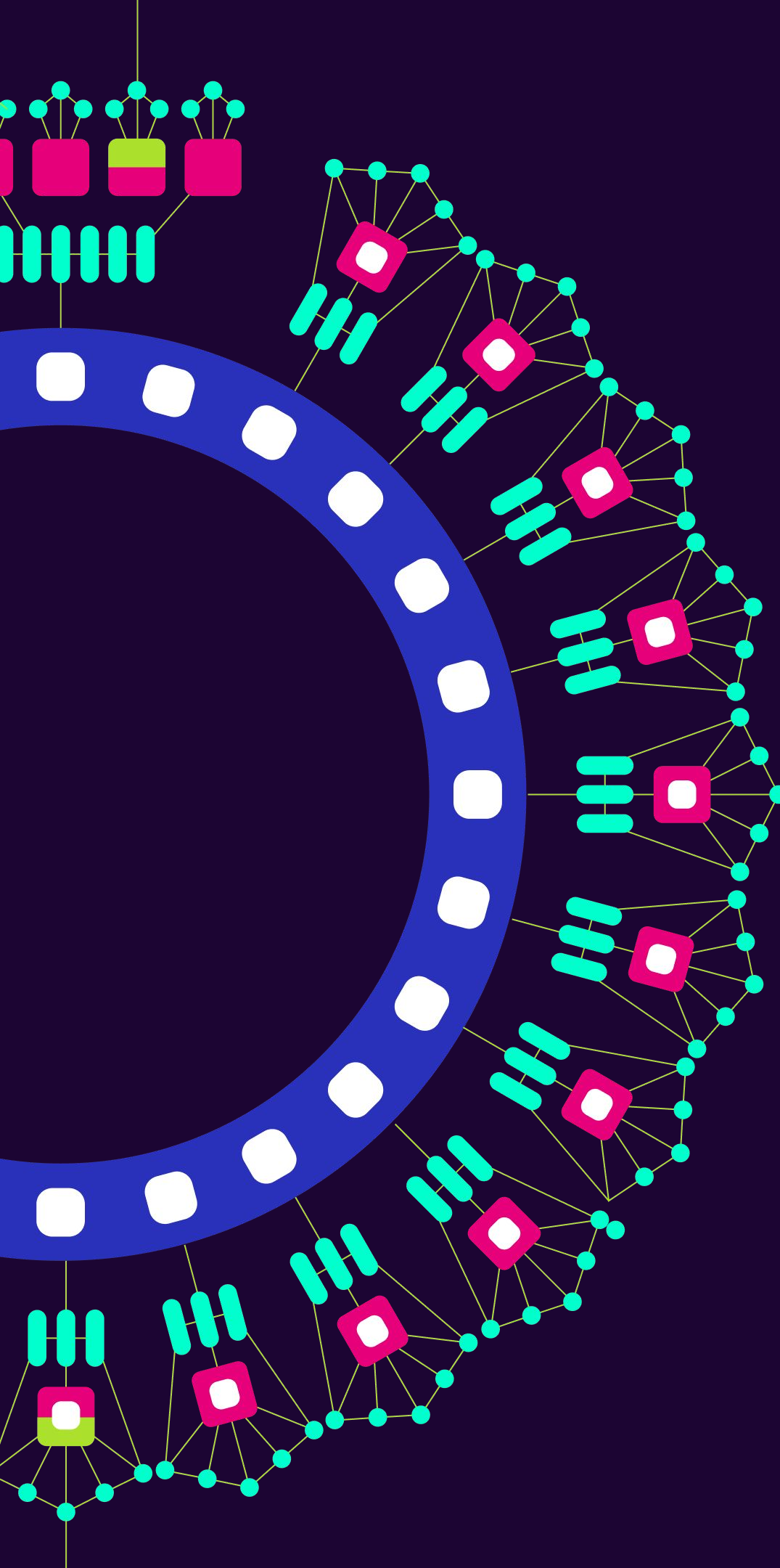


## UPGRADES ARE DIFFICULT

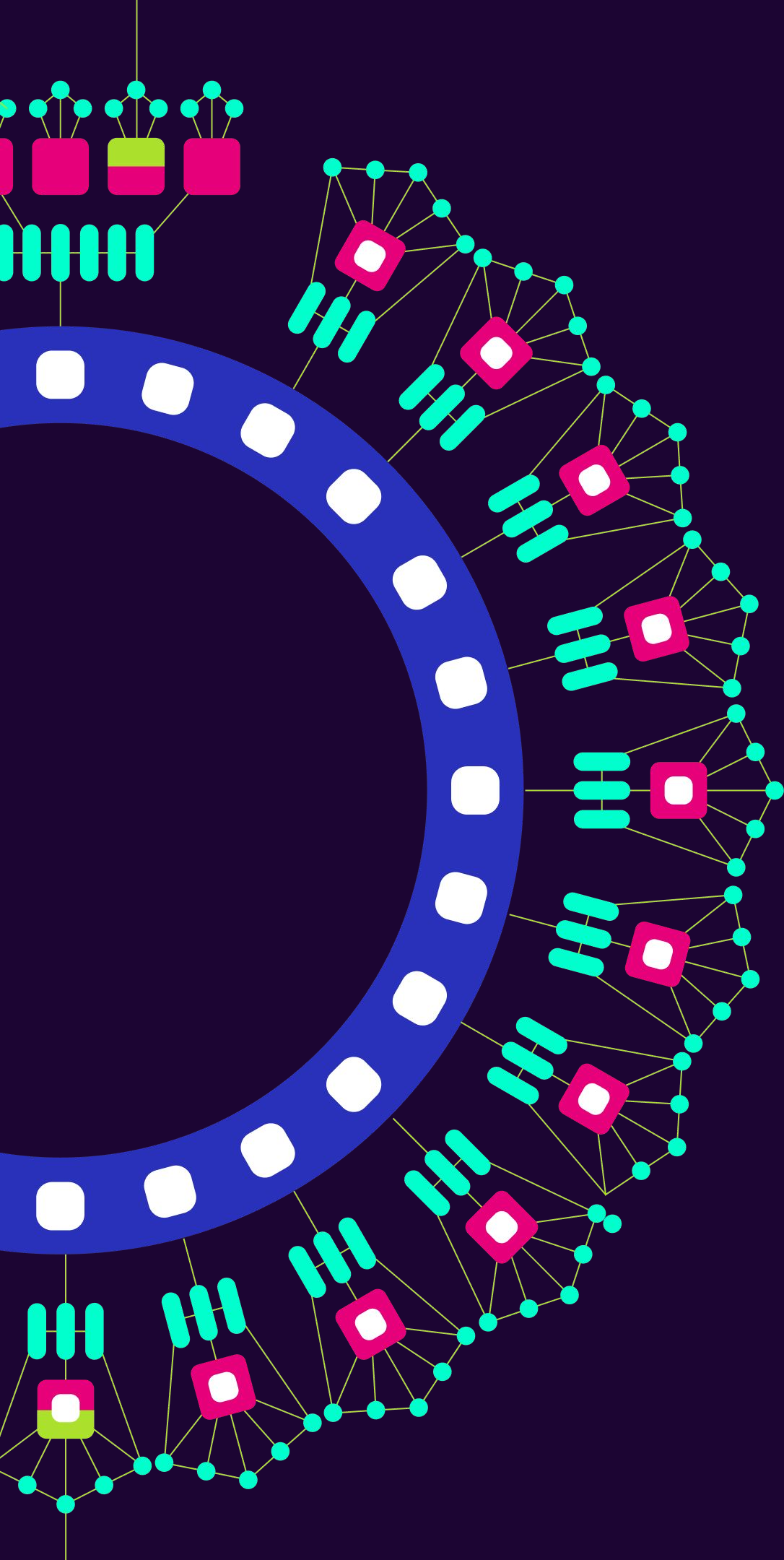
Users of the network must independently upgrade their software; otherwise the chain can split into two!



HOW DO WE  
**SOLVE** THESE  
CHALLENGES?

A diagram illustrating the Polkadot network architecture. It features a central blue ring with white square nodes, representing the Relay Chain. Surrounding this ring are multiple smaller, interconnected networks of nodes and lines, representing various parachains. The nodes are colored in shades of blue, green, and yellow, and the lines are thin and light blue. The overall structure is circular and symmetrical, with the Relay Chain at the center and the parachains radiating outwards.

**POLKADOT IS A HETEROGENEOUS  
MULTICHAIN PROTOCOL THAT  
CONNECTS AND SECURES  
BLOCKCHAINS WITH POOLED  
SECURITY AND INTEROPERABILITY.**



**TRANSLATION:**  
**POLKADOT IS A SET OF BLOCKCHAINS  
THAT WORK TOGETHER AND TALK TO  
EACH OTHER SECURELY.**



## A circular diagram representing a network structure. At the center is a large black circle. Surrounding this is a blue ring with 24 white dots. Outside the blue ring is a ring of 24 pink squares, each containing a white dot. These squares are connected to a larger network of green dots and lines. A grey arrow points to one of the pink squares.



# PARACHAINS ARE CUSTOM-BUILT ON POLKADOT FOR SPECIFIC USES

# POLKADOT FEATURES



**CONNECTS NETWORKS  
TOGETHER**



**HANDLES HEAVY TRAFFIC AT  
SCALE**



**INDUSTRY-LEADING SECURITY**



**ENABLES CUSTOM-MADE  
PLATFORMS BUILT FOR  
SPECIFIC APPS**



**REVOLUTIONIZES ONLINE  
GOVERNANCE THROUGH  
OPEN, COMMUNITY-DRIVEN  
DECISION-MAKING**



**SELF-UPGRADES ALLOWING  
IT TO BE FUTURE-PROOF**



# SUBSTRATE - POLKADOT SDK

**SUBSTRATE IS A MODULAR, FLEXIBLE, EXTENSIBLE  
FRAMEWORK FOR BUILDING BLOCKCHAINS.**

**RE-USE BATTLE-TESTED LIBRARIES  
WHILE BUILDING THE CUSTOM  
COMPONENTS THAT MATTER MOST.**

# CUSTOMIZATION

**BLOCKCHAINS ON POLKADOT ARE CUSTOM-BUILT AND OPTIMIZED**

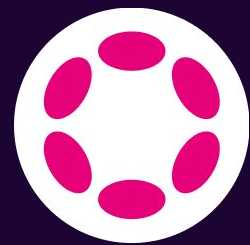
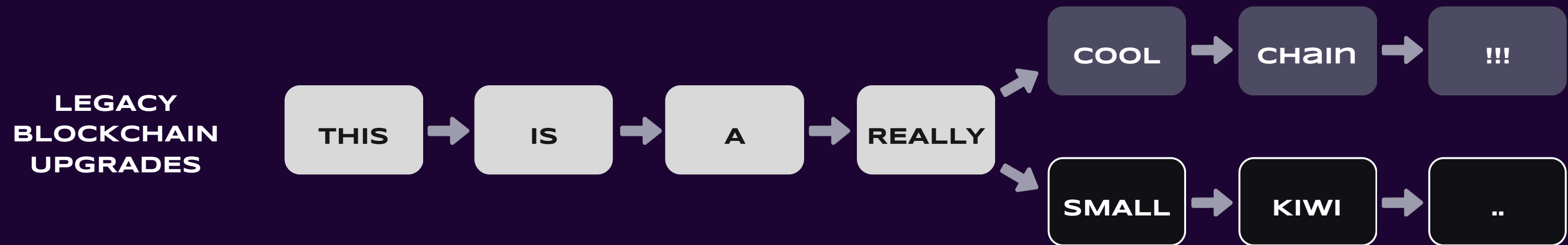


**\*CHECK OUT THE NEW SUBSTRATE.IO WEBSITE FOR INFO AND TUTORIALS ON SUBSTRATE**

# FUTURE-PROOF

## RUNTIME CODE IS ON-CHAIN









## EASY-TO-UPDATE





# NOT JUST THEORETICAL

The Polkadot Relay Chain supports 50 parachains and has upgraded 50 times with no forks

parachains	parathreads
50	15
parachains	
1,000	 AssetHub
1,001	 Collectives
1,002	 BridgeHub
2,000	 Acala
2,004	 Moonbeam
2,006	 Astar
2,007	 Kapex
2,008	 Crust

Event History For All (50)				
Spec Version	9431	Module	system	Event codeupdate
Time Dimension	date	Date	Start Date	To End Date
Event ID	Block	Extrinsic ID	Time	Action
17840000-0	17840000	-	14 days 10 hrs ago	system (CodeUpdated)
16450000-6	16450000	-	111 days 2 hrs ago	system (CodeUpdated)
15978362-10	15978362	-	143 days 21 hrs ago	system (CodeUpdated)
14543918-0	14543918	-	244 days 1 hr ago	system (CodeUpdated)

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# Questions?

<https://polkadot.network>

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