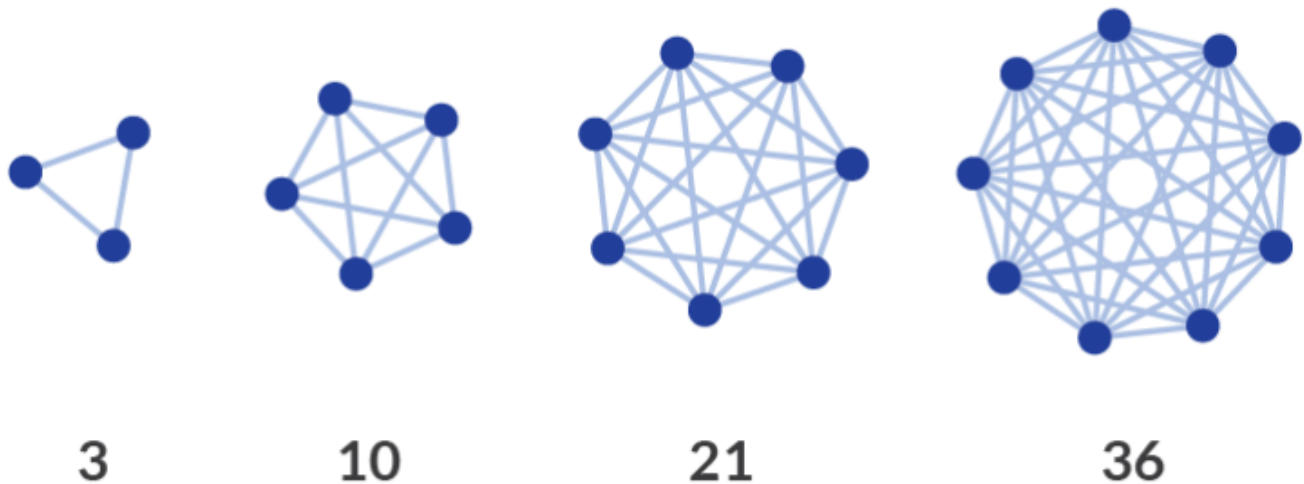


6. Metcalfe's Law

Understanding Metcalfe's Law

To better understand Metcalfe's Law, let's break it down into simpler terms. Imagine you have a telephone network with just two people. In this case, there is only one possible connection between them.



Now, let's say you add a third person to the network. With three people, there are now three possible connections: between person A and B, between person A and C, and between person B and C.

As you keep adding more people to the network, the number of potential connections grows rapidly. With four people, there are six possible connections; with five people, there are ten possible connections, and so on.

The Mathematical Formula

Metcalfe's Law can be expressed mathematically as:

$$\text{Value of a network} = n^2$$

Where "n" represents the number of connected users in the network.

For example, if a network has 10 users, its value would be $10^2 = 100$. If the network grows to 100 users, its value would be $100^2 = 10,000$. This demonstrates the exponential growth in value as the network expands.

Real-World Examples

Metcalf's Law can be observed in various real-world networks, such as:

1. **Social Media Platforms:** As more people join a social media platform, the value of the platform increases. With more users, there are more potential connections, interactions, and content shared, making the platform more valuable to its users.
2. **Telephone Networks:** The value of a telephone network grows as more people subscribe to the service. With more users, there are more people to call and communicate with, enhancing the utility of the network.
3. **Cryptocurrencies:** Metcalfe's Law can also be applied to cryptocurrencies. As more people adopt and use a cryptocurrency, its value and utility increase. A larger user base leads to more transactions, liquidity, and overall network value.

See Also [1. Key Terms and Concepts in Computer Networks](#)