The Role of a State as an Essential Part of Global Network Infrastructure

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International Seminar of "the Belt and Road Initiative" and Intellectual Property Risk

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An example of flow of knowledge and information.

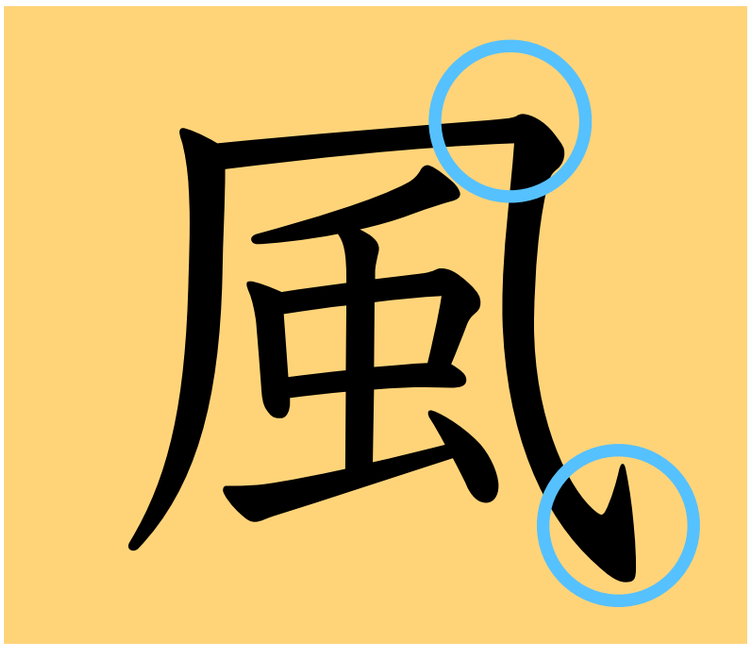
Wang Xizhi, China
4th Century

Kukai, Japan
9th Century

Modern Font, Japan
21st Century

Wang Xizhi, China
4th Century

Kukai, Japan
9th Century

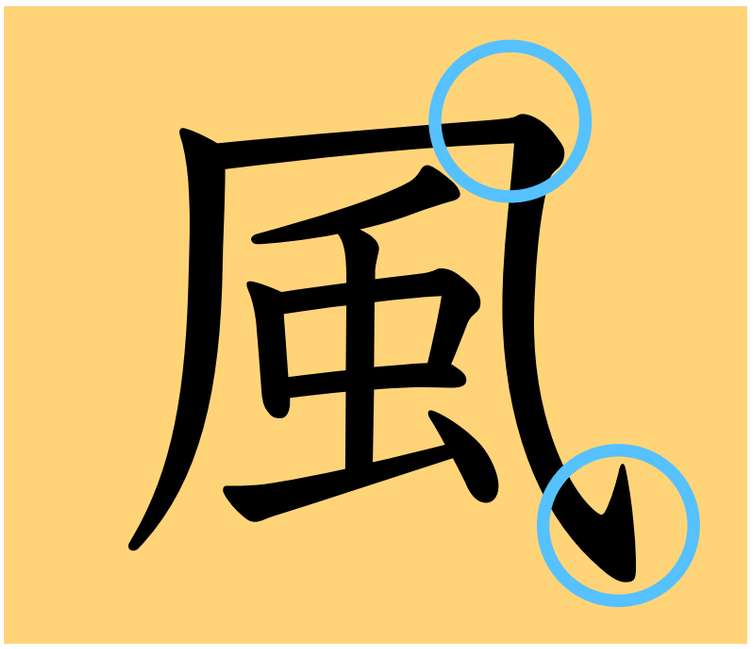


Modern Font, Japan
21st Century

Similarities show a flow of information,
while differences show an incremental changes or modification.

Wang Xizhi, China
4th Century

Kukai, Japan
9th Century



Modern Font, Japan
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Similarities show a flow of information,
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王羲之

Wang Xizhi, China
4th Century

Kukai, Japan
9th Century

nt, Japan
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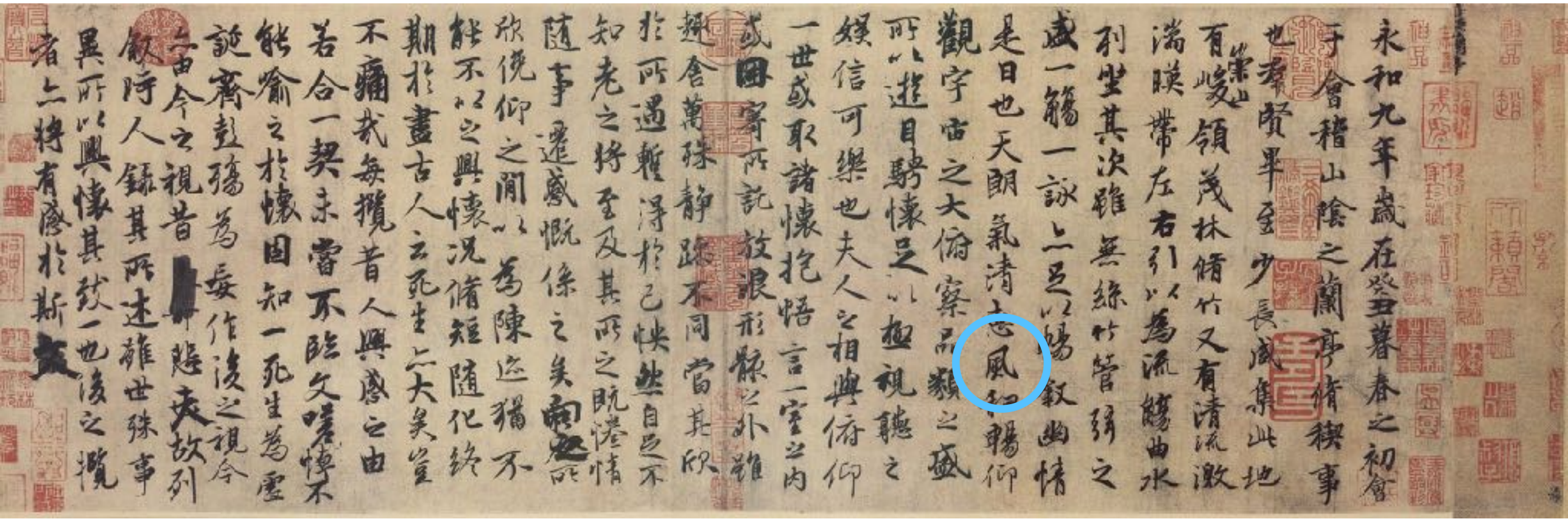
- Wang Xizhi, 303—361.
- Known as the greatest Chinese calligrapher.

蘭亭集序 Preface to the Poems Collected from the Orchid Pavilion

Lantingji Xu, written by Wang Xizhi, in 353



Similarities show a flow of information,
while differences show an incremental changes or modification.

空海

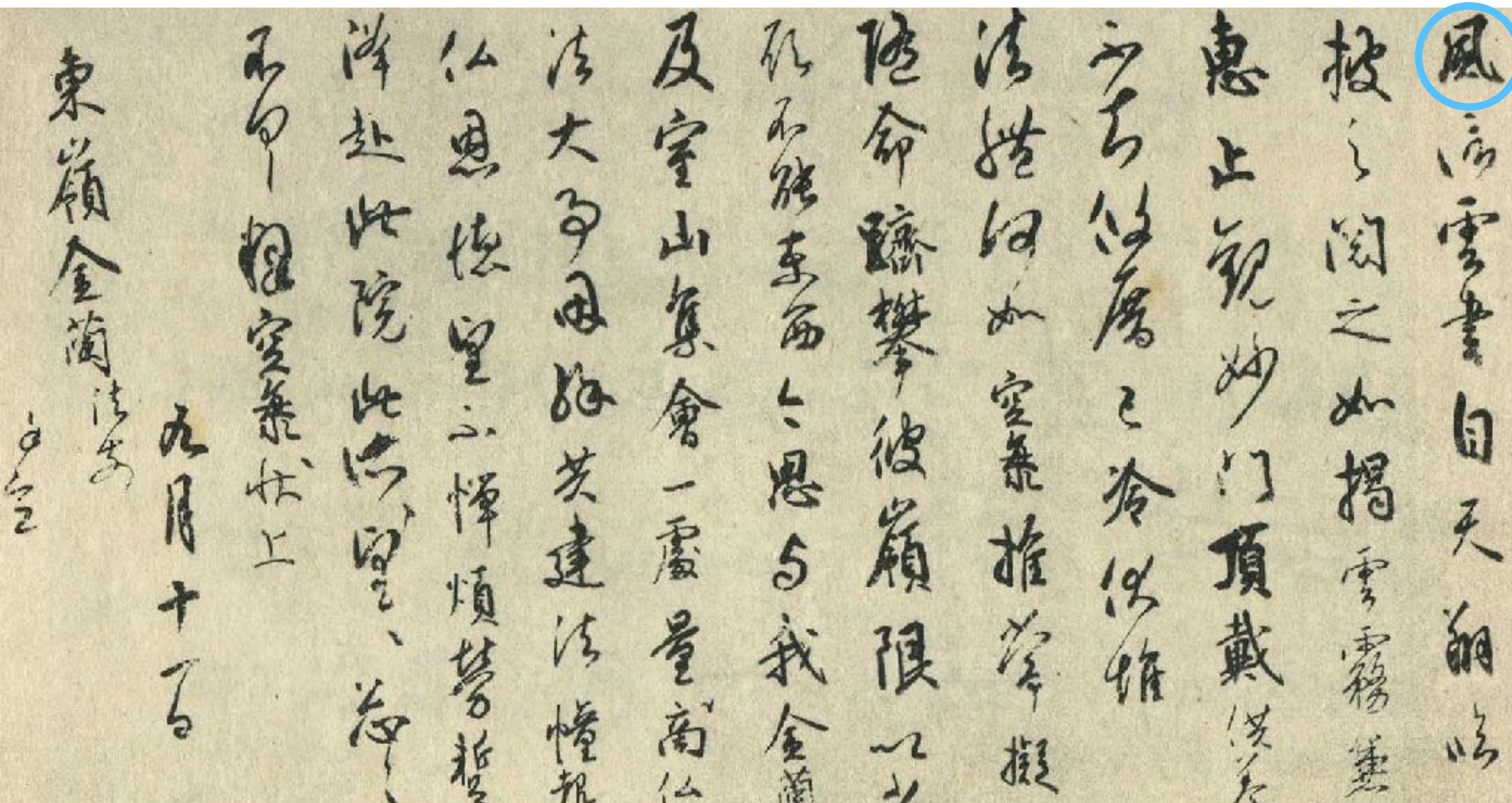
Wang Xizhi, China
4th Century

Kukai, Japan
9th Century

- Kukai, 774—835
- Known as the greatest Japanese calligrapher.

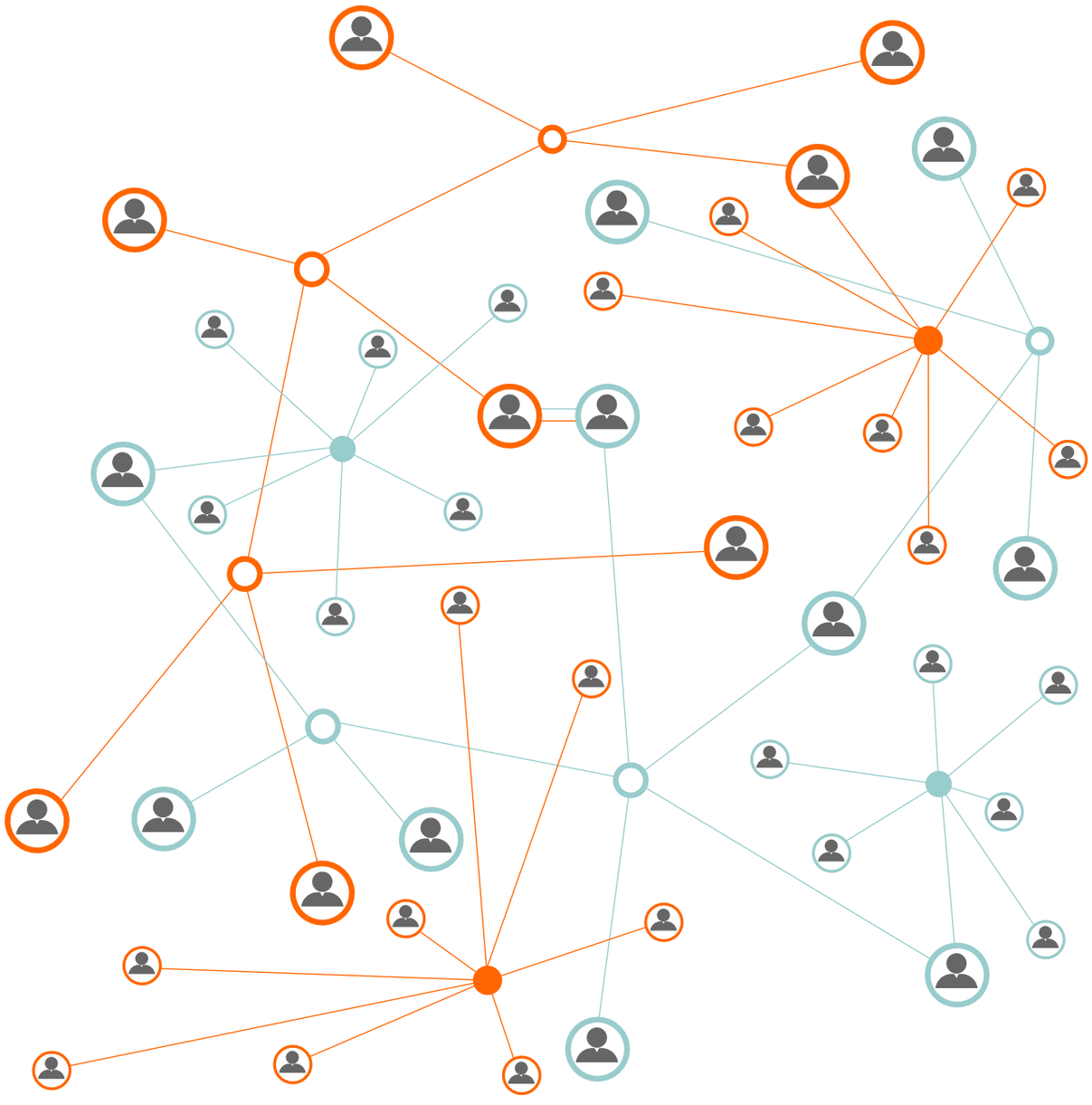
風信帖

Fu-Shin-Jou, written by Kukai, around 810

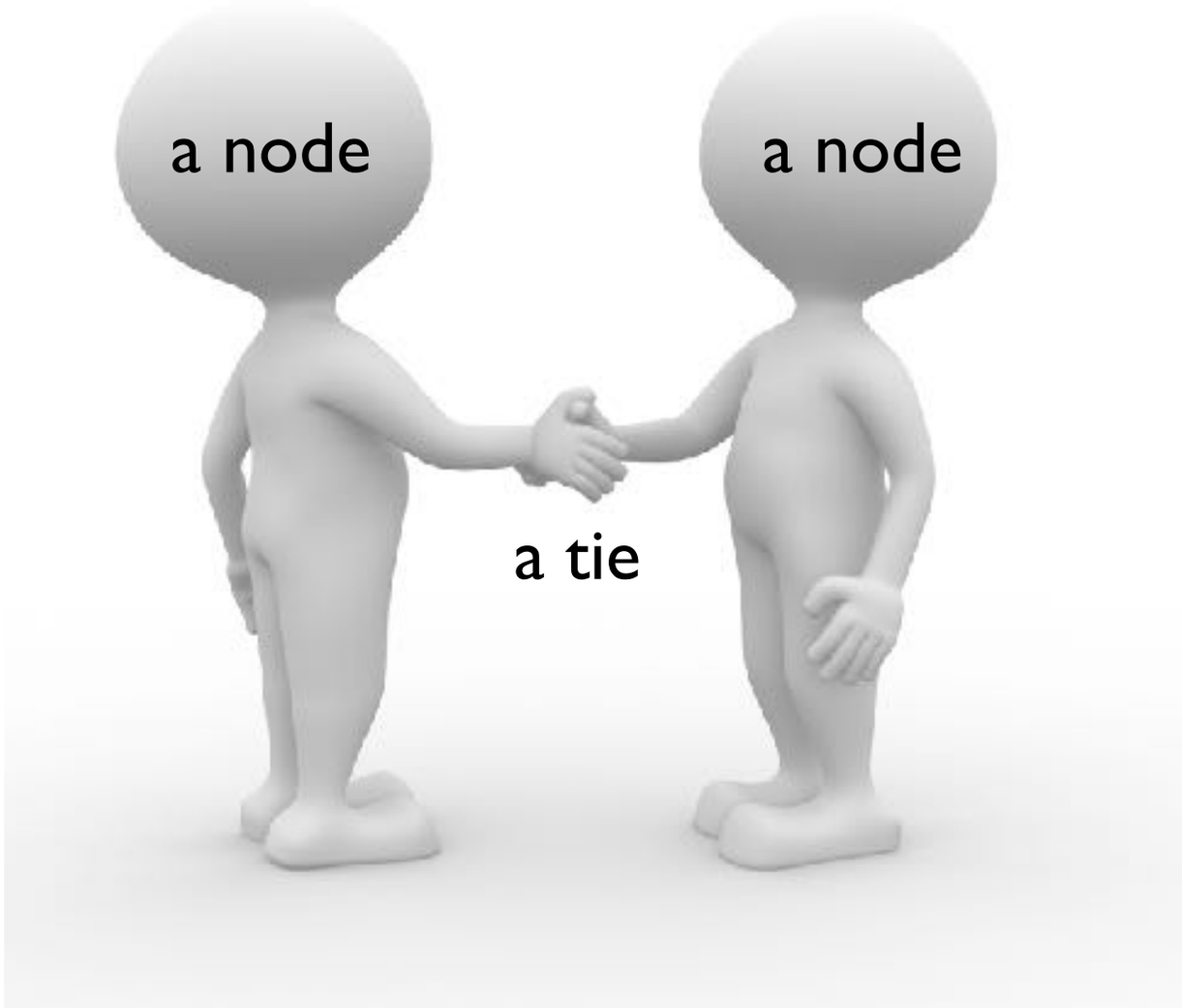


The essential role of a social network, which also causes problems, in disseminating knowledge and information.

- Knowledge and information is transmitted and diffused through our social network comprised of nodes and ties.
- Each of the nodes corresponds to a person or an entity.
- Each of the ties corresponds to the connection between a pair of persons or entities.

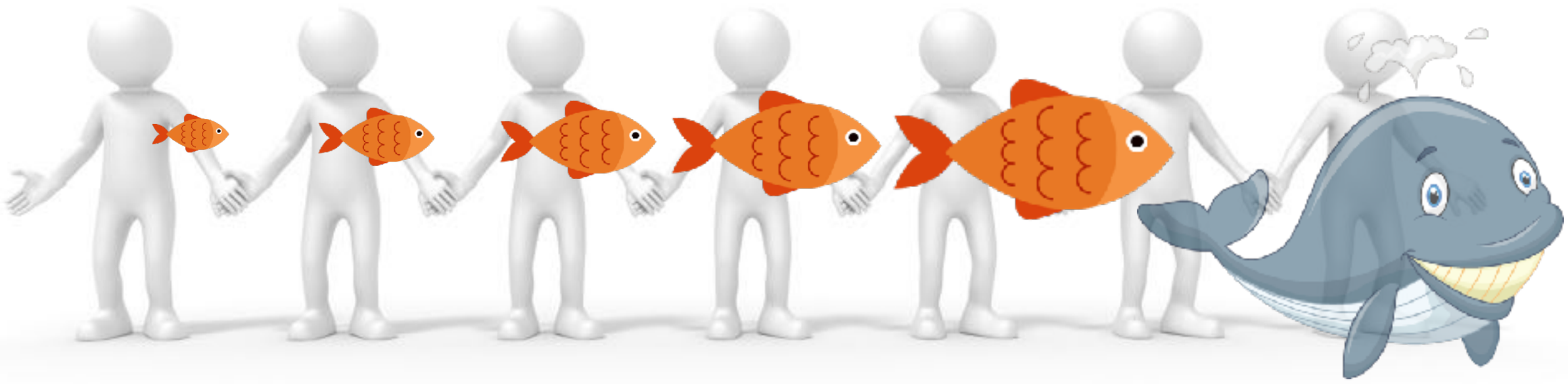


- Each node conveys knowledge and information to other nodes by establishing a tie with each of them.



- A piece of knowledge or information received by a creative node (or, a creative person) is likely to be improved or integrated with other pieces of knowledge or information.

- This is so-called "innovation."



- However, knowledge and information is likely to be changed, modified, or even lost while it is conveyed through nodes.

- As the degree of separation increases (i.e., more and more intermediaries), the discrepancy from the original is likely to be greater.

- Also, with more nodes in a path, more time is spent conveying knowledge and information through the path.

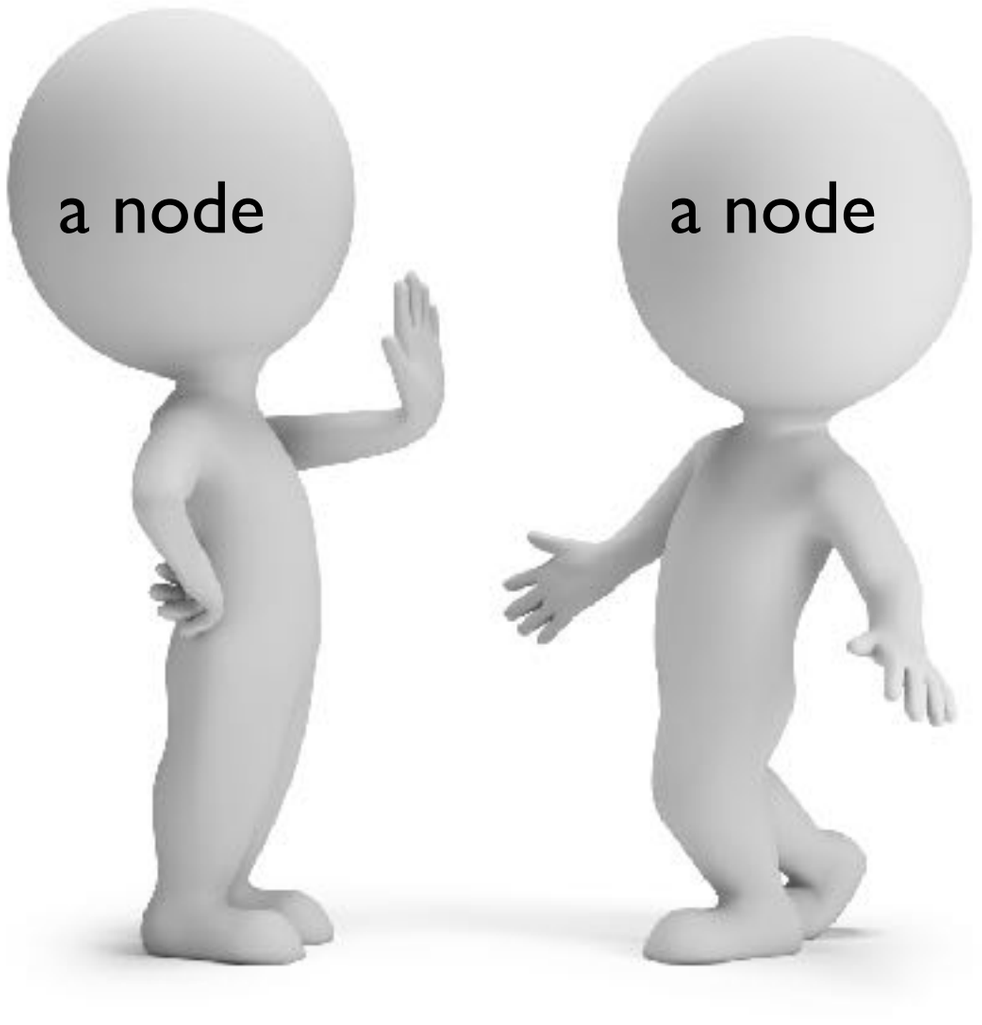
- Sometimes, a node declines to convey knowledge and information to other nodes for various reasons.

- Intellectual property rights can be used:

  - to simply reject conveying knowledge and information or products embodying them;

  - to monopolize the paths to distribute such; or

  - to stop the dissemination of mutilated or unauthorized reproduction of knowledge or information.

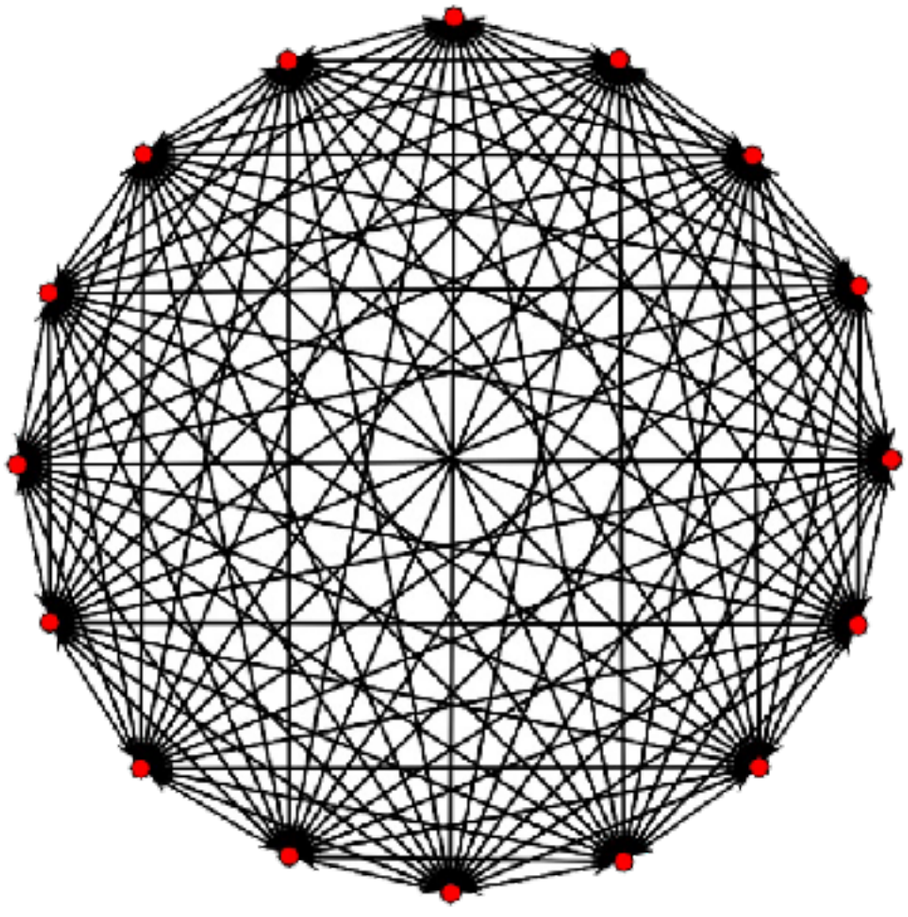


- A node plays an essential role in enabling a social network to disseminate knowledge and information.

- A node also plays a negative role by reducing the quality of knowledge and information disseminated through a social network.

- IP rights also have their advantages and disadvantages in achieving quicker and wider dissemination of qualitative knowledge and information.

The pros and cons of a complete graph as a network to disseminate knowledge and information.

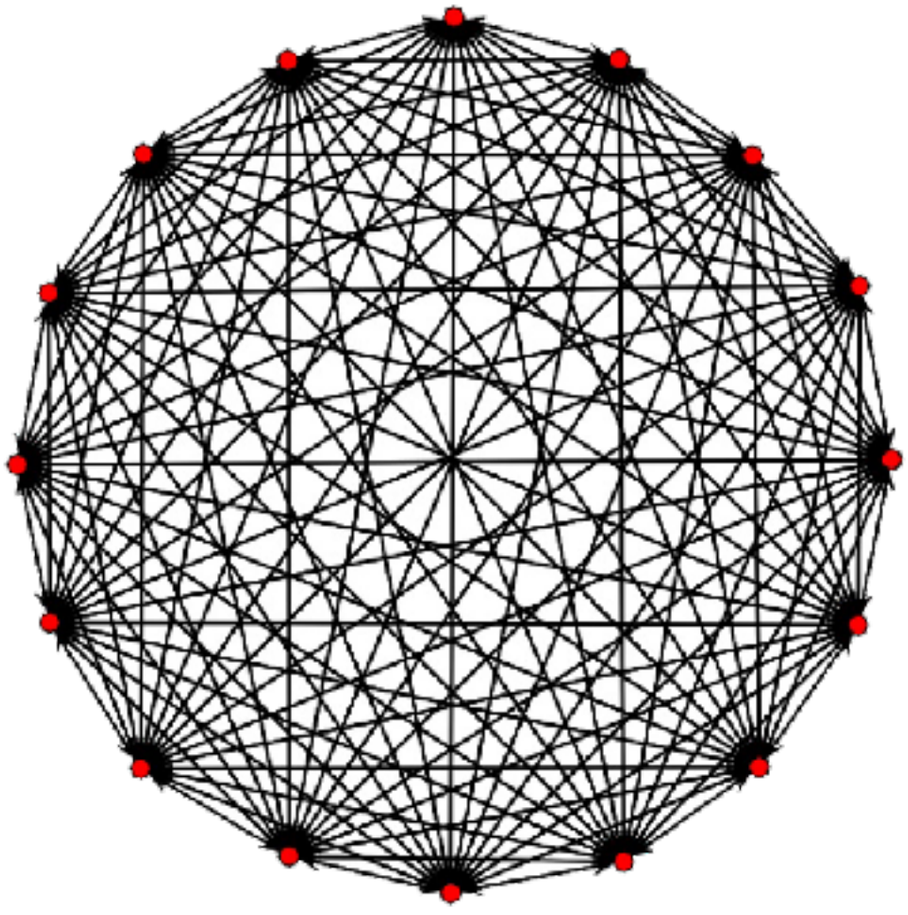


The pros.

- In a complete graph, every node is directly connected with every other node.

- By this way, every piece of knowledge and information can be delivered from a node to another node very quickly without change or loss.

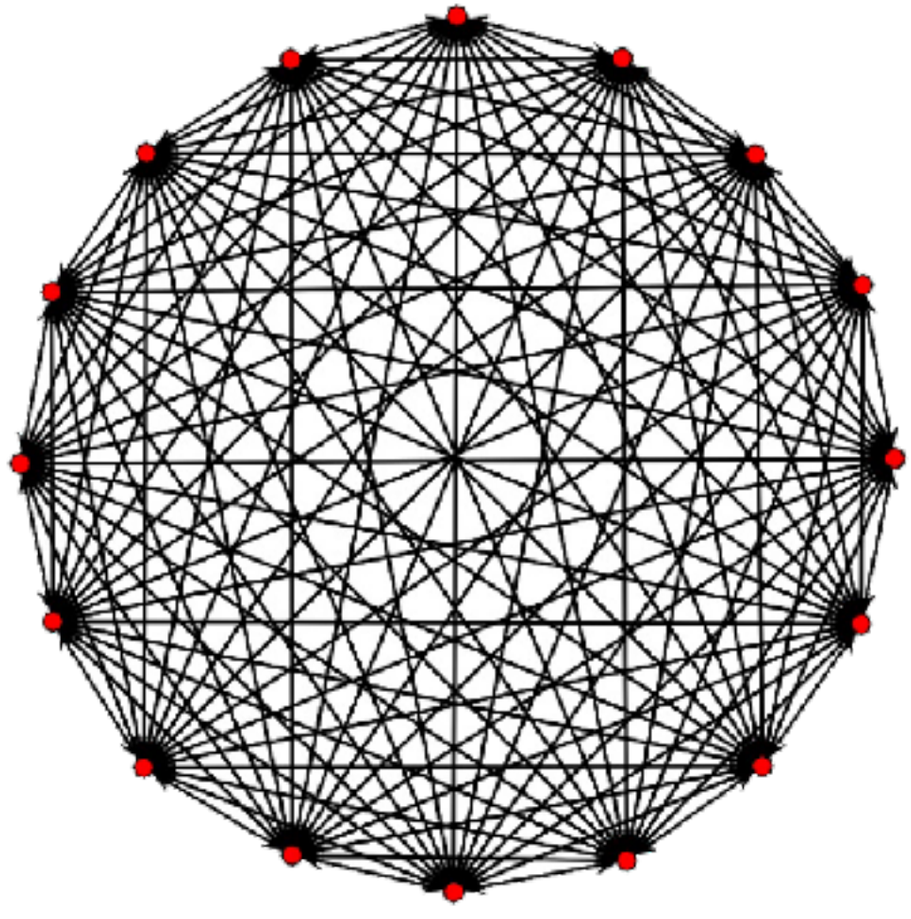
- Therefore, seemingly, a complete graph is the ideal network to efficiently disseminate knowledge and information, while avoiding the disadvantages of serial delivery of knowledge and information through multiple nodes.



The cons.

- However, the cost of establishing such complete connection between every pair of nodes is very expensive.

- Accordingly, it is not practical to establish a complete graph in reality.



A two-tiered network system enables each node to be connected with any other nodes at reasonable cost.

- A network infrastructure is provided by a government or a business entity.

- Any node can connect itself with other single or multiple nodes using the said infrastructure.

- The cost per connection becomes affordable, because the cost to build and maintain the infrastructure is shared by very large number of nodes.

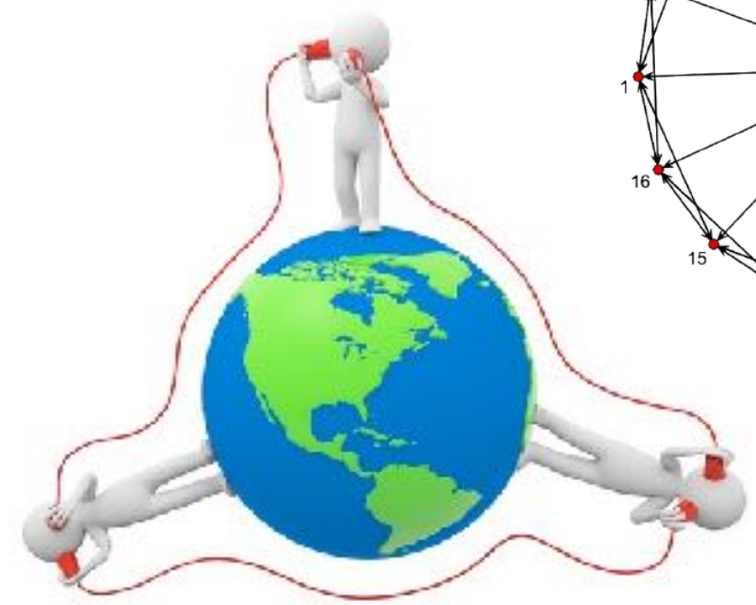
Infrastructure

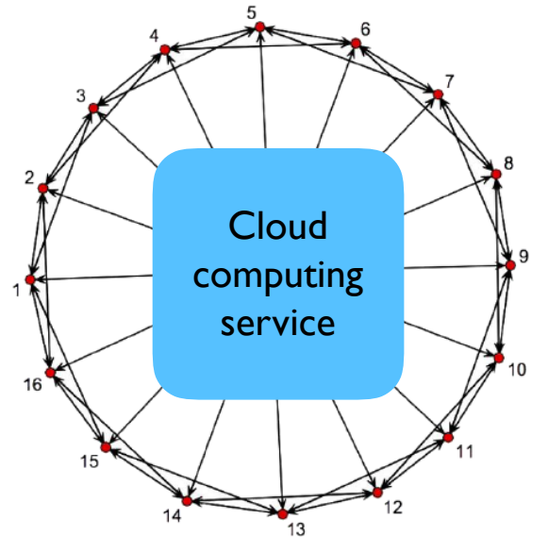
A postal system, a telecom service network, and modern cloud computing service are typical providers of network infrastructure.

- A network infrastructure must be transparent and neutral so that any node can establish a communication or distribution network.

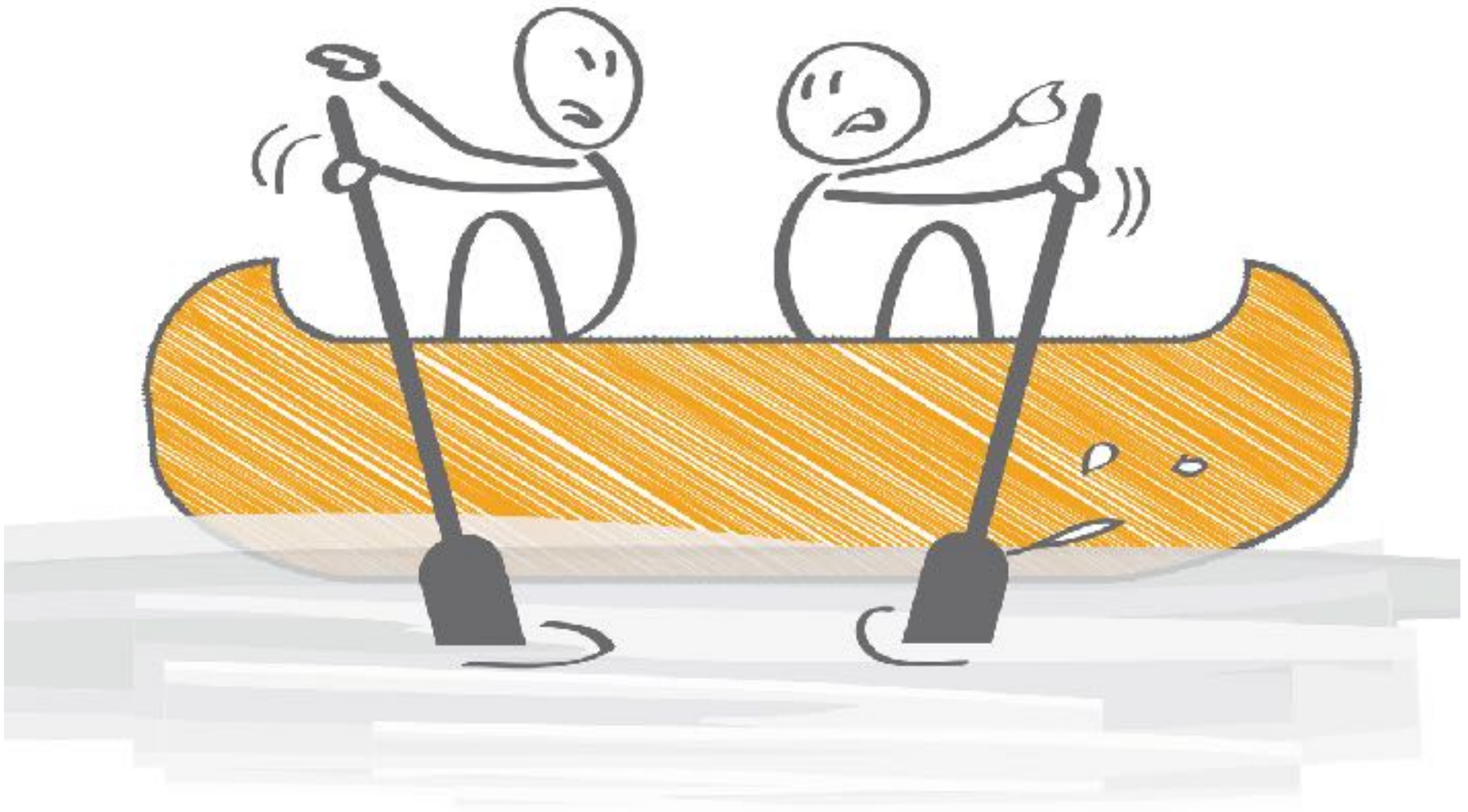
- "Transparent and neutral" implies that there is no filtering out of knowledge or information.

- The network infrastructure is neutral between the IP rights holder and the alleged infringer.





Two conflicting roles of a state

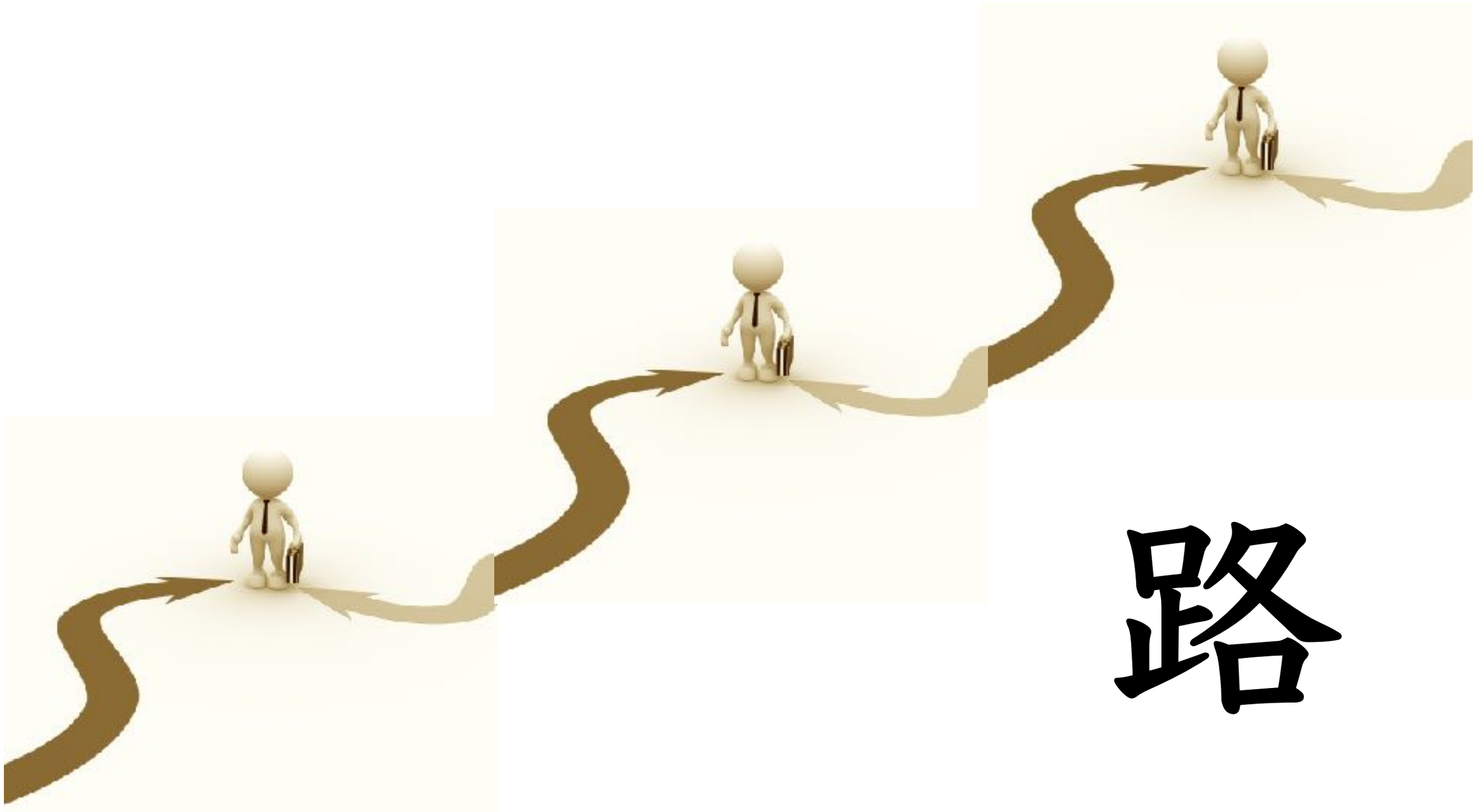


A state is a node in a network.

- It is natural for a node to intervene in a flow of information, if such flow is intermediated by such node.

- Such intervention may include modification, filtering, enforcement of IP rights, etc.

A road connects nodes.



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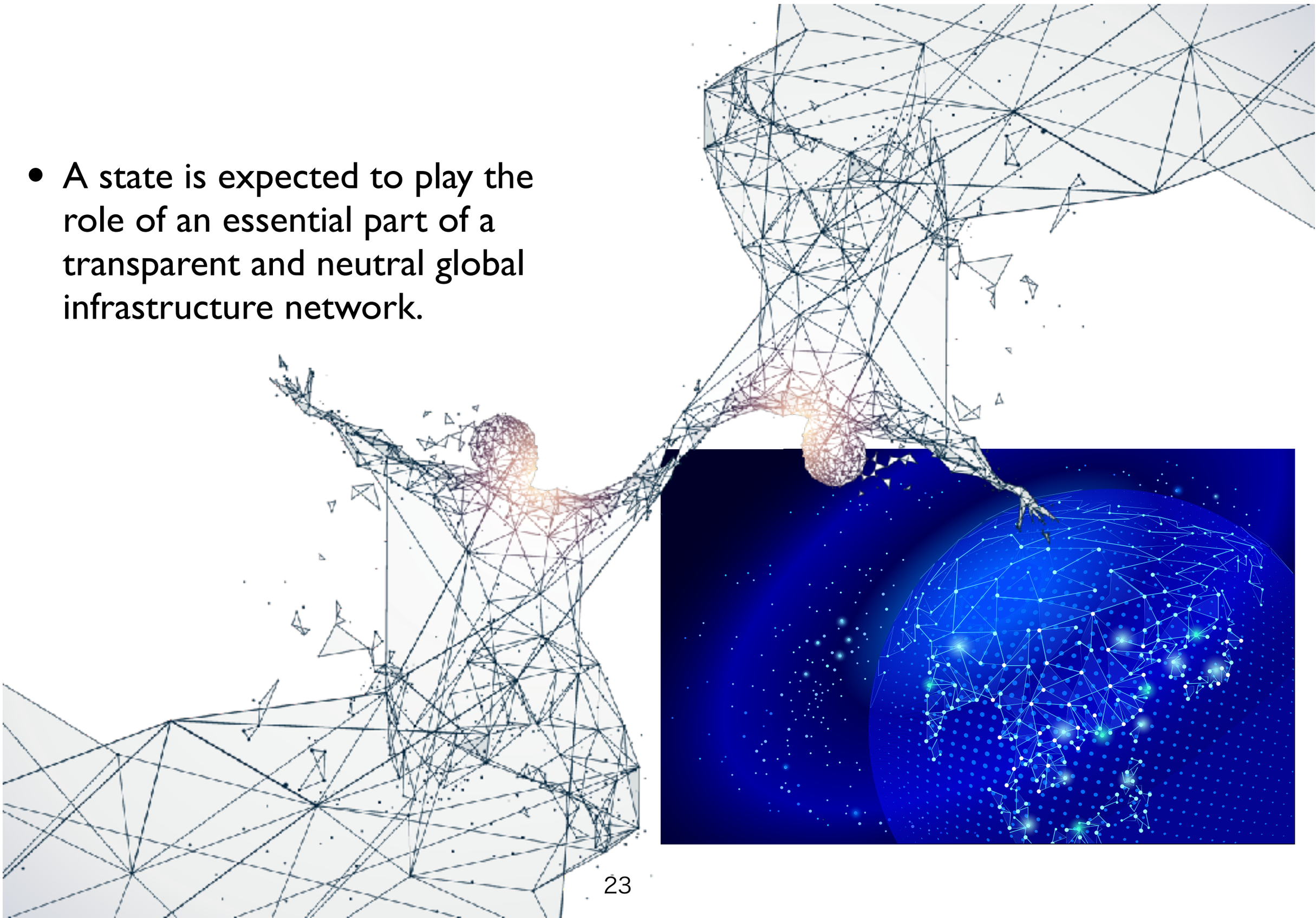
A state is a part of a global infrastructure network.

- A state is expected to play the role of an essential part of a transparent and neutral global infrastructure network.



A belt is an infrastructure network.

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In the context of the Belt and Road initiative, each state is urged to recognize its role as a part of a global infrastructure network.

Thank you.