

A Method for Emerging Innovation and DX by Using P2P and Go

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Abstract— In 1995, a research project started at the NTT Laboratories with the goal of fostering innovation (creating new values through new ideas) and promoting DX (digital transformation of society, business, and organizations) through the “loosely connected and autonomous networks” of computers. This became known as “the Brokerless Theory,” the world’s first P2P (Peer-to-Peer) theory, which attracted global attention. From this new concept of “loosely connected and autonomous networks,” numerous innovative social models, business models, and internet services emerged, including Skype (Sky P2P), social networking services, blockchain, and so on. Recent research has revealed that a new concept called “the External Vector” is effective for fostering innovation and DX. The concept of The External Vector means building new, weak, loose, and autonomous connections between different fields, from which new value can be created. New value created by connections between resources through the External Vector is positioned as one of the two wheels for innovation and DX emergence. The other is technological innovation creating new values with technological progress. This paper proposes the following three points:

- The External Vector is effective for fostering innovation and DX.
- Building connections through the External Vector requires verbalizing (theorizing) the concept of the External Vector and training in the practical use of this concept.
- The combination of “P2P Concepts and Principles” and “Go Concepts and Principles” is effective for verbalizing (theorizing) and training.

Keywords— P2P Theory, Go, Innovation, DX, External Vector, Internal Vector, P2P Network, Communications



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Takashige Hoshiai was born in Japan, 1962. He received the Ph.D. degree in Engineering. He was a visiting researcher at Bell Laboratories from 1995 to 1997, and proposed the brokerless model in 1998, and invented the semantic information network architecture SIONet, which is the technology to realize the model. In 2011, he proposed Social Community Brand (SCB theory) that utilizes P2P for local revitalization. He is currently conducting research on regional revitalization and the emergence of regional innovation using SCB theory. He is currently a president of Sojo University IoT/AI Center, a professor of the Faculty of Computer and Information Sciences, Sojo University, an invited researcher of Waseda University, a director of the SCB Laboratory and a principal of SCB Innovation Academy.