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Emergence of Service Science:

Scientometrics and Network Analysis

Naoki Kinugasa

School of Knowledge Science,
Japan Advanced Institute of Science and Technology
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Service research has been conducted mainly by business economics because service sector stands majority in the economic indicators and expands its related scope from service industries into environment, energy, medical and so on. Recently it has been paid much attention by other disciplines, for example, manufacturing economic business, design engineering after the proposal concept of Service Science by Palmisano report, 2004.

In this paper, the relationship of keywords, researchers, research fields and research institutes was visualized by Scientometrics and Network analyzing the abstracts and bibliographic information of service literatures and patents in order to clear the coming up questions, that is what kind of service research has been conducted, how many researchers, which research fields are there and how do practitioners get the fruit from the research works. Furthermore, to reveal the emergence process of Service Science as the new discipline was major interest.

It was suggested for the research question "how has been Service Science emerged as the new discipline", even though service research had been started in 1980's by business

economics in the field of service industry and medical, furthermore the research capability had been quantitatively increased and widely spread by participation of information communication technology in 1990's before Palmisano report, both service research fields and academic disciplines were isolated as the clusters. It was also suggested the substance and outline of Service Science as the new discipline was obscure and in the process of emergence, in which interdisciplinary approach was not found except partially movement of researchers as the interdisciplinary agents. It was also found the Service Science research is promoted by the researcher's bottom up who spontaneously exchanges information and knowledge through different clusters. This promotion style is quite different with that of Nano-Technology or Bioscience which was lead by governmental top down style.

The new emergence model of academic discipline so called "Cluster Routing Model" which is bottom up style was proposed as the theoretical implication in this paper. If the academic discipline as the sub-cluster in the main cluster of service field would be assumed as the network node, the node needs to exchange its information and knowledge inside or outside of main cluster. The situation in case of the service field as the sub-cluster in the main cluster of academic discipline is completely same. In this model, as the router of network is not set up, the researcher as the agent may act as the router to exchange, transform and permeate its information and knowledge. It is considered knowledge management might be important for emergence of new discipline because this function of agent is similar to them. It can be concluded Cluster Routing Model is quite new due to the definition of dual structure of Service Science emergence and assignment of the roll of agent.

Concerning to the practical implications, the necessity of "Ba" such as Service Science Society where the related parties can meet and discuss was proposed to accelerate the Cluster Routing Model. Furthermore, the necessity to establish the core concept for Service Science discipline was proposed to emerge and examples were listed including data, human model, process management and social systems categories.