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Research on support activities to improve
software development ability by focusing attention on service value

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Activities to improve the capabilities of software development have been carried out since the 1990s that have corresponded to the situation that the size of embedded software is expanding rapidly and the complexity of embedded software is also increasing rapidly. These activities have aimed at promoting greater efficiency and productivity, or higher quality software. Although these activities have been achieving a great deal of success in some organizations, they have not obtained the expected results in some cases despite hard work by promoters. The results of support activities have been considered to be greatly dependent on individual promoters' support activities in these situations, and the probability that support activities will succeed is not high.

On the other hand, investigations into service science have been proceeding briskly in recent years, where "services" are defined as activities to support customers to achieve their purposes. Services are provided according to customer attributes and conditions that lead to services that are more valuable based on the "value in use" concept.

Based on such considerations, this paper proposes a logical activity model to support improvement ability of software development organization by applying ideas on service-value creation in service science, and analyzes the effectiveness of the model with cases.

The model this paper proposes is developed by analyzing activities of skilled and experienced promoters, and refers to the IDEAL model and Constantine's management paradigm. The IDEAL model is developed by Software Engineering Institute of Carnegie Mellon University. Many cases are promoted by referring to the IDEAL model as an activity model to improve software organization ability. To analyze effectiveness of the proposed model, four characteristic cases are selected from cases I experienced in the past.

Keywords: Service, Value-co-creation, Software process, Software organization capability, Software process improvement