

Analyzing the Market Growth in Application Programming Interface Economy Using Time-Evolving Model

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Abstract : API (Application Programming Interface) economy is expected to create new value by converting corporate services such as information processing and data provision into APIs and using these APIs to connect services. Understanding the dynamics of a market of API economy under the strategies of participants is crucial to fully maximize the values of the API economy. To capture the behavior of a market in which the number of participants changes over time, we present a time-evolving market model for a platform in which API providers who provide APIs to service providers participate in addition to service providers and consumers. Then, we use the market model to clarify the role API providers play in expanding market participants and forming ecosystems. The results show that the platform with API providers increased the number of market participants by 67% and decreased the cost to develop services by 25% compared to the platform without API providers. Furthermore, during the expansion phase of the market, it is found that the profits of participants are mostly the same when 70% of the revenue from consumers is distributed to service providers and API providers. It is also found that when the market is mature, the profits of the service provider and API provider will decrease significantly due to their competition, and the profit of the platform increases.

Keywords : API economy, ecosystem, platform, API providers

Conference Title : ICDET 2023 : International Conference on Digital Ecosystems and Technologies

Conference Location : Paris, France

Conference Dates : October 30-31, 2023