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# Open Source as Open Innovation: Creating and Capturing Value in Value Networks

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## Open Source as Open Innovation: Creating and Capturing Value in Value Networks

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### Abstract

Given that existing theories of the firm do not offer feasible answers as to how firms create and capture value with Open source software (OSS) and the fact that open source raises questions about how business can effectively create and capture value through the application of OSS in a manner that leverages open innovation qualities, there is a clear need for more research in this regard. The study utilises a theory-building approach, deriving a model from extant research and refining the model through case study analysis of three European firms which include a supplier of medical equipment and devices, a telecommunications provider and an electronics and systems company that serve defence, aerospace and security markets worldwide. The findings reveal that a firm's ability to create and capture value with OSS is augmented by their ability to gain access to external and internal value networks of potential complementors.

**Keywords:** open source software, open innovation, value creation, value capture, value networks

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# OPEN SOURCE AS OPEN INNOVATION: CREATING AND CAPTURING VALUE IN VALUE NETWORKS

## *Abstract*

Open source software (OSS) is seen as one of the most well-established examples of open innovation, resulting in changing views of the OSS phenomenon from a low cost artifact to a driver of strategic business value. In its emergent form, OSS represented a community-based software development model where geographically dispersed programmers collaborated to produce software. However, OSS has since transitioned into the realm of mainstream business and plays an important role in the business models for firms in high technology and other industries. Nonetheless, as an open innovation phenomenon, OSS raises concerns in commercial settings due to worries about the quality and suitability of external ideas, perceived competitive necessities, the challenges associated with exploiting global networks not current known to the firm, and issues relating to organisational control. Consequently, the very concept of OSS as a form of open innovation requires all types of firms to rethink their strategy. In addition, the shift of focus from ownership to one of openness requires a reconsideration of the processes that facilitate value creation and value capture. However, the emergence of OSS poses a puzzle for conceptions of organisational theory. Our traditional understanding of the organisation has been that the productive activities of individuals are organized in one of two ways, either as employees in firms, following directions of managers, or as individuals in markets responding to market signals. Open source software, however, does not rely on markets or traditional managerial hierarchies to organise production. On the contrary, OSS involves collaboration between firms, suppliers, customers and makers of related products to pool research and development on software. Given that existing theories of the firm do not offer feasible answers as to how firms create and capture value with OSS and the fact that open source raises questions about how business can effectively create and capture value through the application of OSS in a manner that leverages open innovation qualities, there is a clear need for more research in this regard.

Therefore, the objective of this research is to examine how firms utilising OSS create and capture value. The study utilises a theory-building approach, deriving a model from extant research and refining the model through case study analysis of three European firms which include a supplier of medical equipment and devices, a telecommunications provider and an electronics and systems company that serve defence, aerospace and security markets worldwide. The findings reveal that a firm's ability to create and capture value with OSS is augmented by their ability to gain access to external and internal value networks of potential complementors. These networks provide firms with the opportunity to access external knowledge and resources that are otherwise unavailable to them. Additionally, these networks offer firms the potential to increase their innovative capacity, generate economies of scale, share risk and also facilitate continuous learning. However, we further illustrate how active membership of value networks and maintaining sustainable relationships depends on a high level of

commitment by all partners in the network, the volume and frequency of knowledge exchange and how well a firm's objectives are aligned to other network participants. Successfully ensuring alignment of objectives and partners' commitment, however, relies on a governance process that comprises a mixture of formal and informal exchange conditions that effectively combines and manages the resources and capabilities of all network actors.

Keywords: open source software, open innovation, value creation, value capture, value networks

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