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A strategy supporting the development towards a circular economy is industrial symbiosis (IS). It is a form of collaborative supply chain management aiming to make industry more sustainable and achieve collective benefits based on utilization of waste, by-products, and excess utilities between economically independent industries. Based on an extensive analysis of published studies on existing IS collaborations and interviews with central stakeholders of a comprehensive IS, this paper investigates IS from a supply chain collaboration perspective. A theoretical framework is built and used to discuss how industrial symbiosis pursues sustainability and to identify the main collaboration aspects and performance impacts. This framework is then used in the analysis of selected published cases. Based on this, we derive propositions on the organizational and operational requirements for collaboration in the context of IS networks, related to the supply chain integration and coordination practices. As IS has only received little attention in the operations and supply chain management community, our propositions directly lead to future research directions. Furthermore, the analysis in this paper provides directions to increase the feasibility and resource efficiency of IS networks and can hence be used by stakeholders involved in these networks.

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