

Supply Chain Collaboration for Industrial Symbiosis: two experiences from Colombia

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Abstract:

Collaboration among supply chain partners pursuing economic, social and environmental benefits has become increasingly necessary in response to globalization and the needs of stakeholders.

Concurrently, industrial symbiosis has grown as a means for reifying environmental inter-firm collaboration. However, these two fields have been studied separately and industrial symbiosis has received little attention in supply chain management literature. Our study proposes a framework to analyze the emergence of industrial symbiosis among supply chain partners.

The framework draws on a literature review focused on supply chain collaboration and industrial symbiosis, comparing experiences in both fields. We examine two industrial symbiosis experiences among firms that are members of the same supply chain and are part of a sustainable enterprise program in Colombia; preconditions for collaboration and cost-benefit outcomes are assessed. Preconditions identified include the existence of social capital among firms, reflected in long-term relationships that build trust, and the intervention of external agents encouraging the companies involved to better communicate their efforts to their stakeholders. Expected environmental and economic outcomes resulting from collaboration were exceeded loosely. This study contributes to literature by offering an analytical tool through which industrial symbiosis among supply chain partners can be better understood and disseminated.

Key words: Industrial symbiosis, inter-firm collaboration, sustainable supply chains.