

The role of strategic alliances in creating technology legitimacy: the emerging field of bio-plastics

Kishna, M., Niesten, E., Negro, S. and Hekkert, M.

Corresponding author: Eva Niesten
Utrecht University, Copernicus Institute of Sustainable Development
Heidelberglaan 2
3584CS Utrecht, Netherlands
Email: E.M.M.I.Niesten@uu.nl
Tel.: 0031-30-2537650

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Abstract

The aim of this study is to analyse the role of strategic alliances in creating legitimacy for an emerging sustainable technology. We focus on the field of bio-plastics, in which institutional pressures from the chemical industry and adjacent industries are present and influence the development of the emerging sustainable technology. As the development of bio-plastics depends on capabilities and resources that are spread over organizations from different industries with different logics, strategic alliances are seen as crucial for the success of this sustainable technology. Alliances enable the combination of complementary resources needed for the development of bio-plastics, and can have a signaling role that increases the legitimacy of bio-plastics. This research is based upon theory that links strategic alliances and institutional theory. More explicitly, we focus on the often-neglected legitimating roles that alliances can play in a field that is engaged with the development of a new sustainable technology. The analysis is based on a database that we constructed using secondary data sources such as industry journals, newspaper articles and press releases. The database contains information on 110 alliances in the field of bio-plastics over the period 1990-2013. Our contributions are threefold. First, we provide a first descriptive overview of different types of alliances in the field of bio-plastics. Second, we propose that technology legitimacy is a new type of legitimacy that can be created by strategic alliances. We offer evidence on the relation between technology legitimacy and other legitimating roles of alliances, and demonstrate that this relation is important for technologies that are still emerging, and are therefore not an established source of legitimacy. Finally, we identify alliances that are typically not considered – these alliances do not have an R&D, production or marketing focus – but have strong legitimating roles. They are intentionally formed to enhance technology legitimacy by establishing (new) institutions that enhance the legitimacy of technologies used in the field.

Expected results

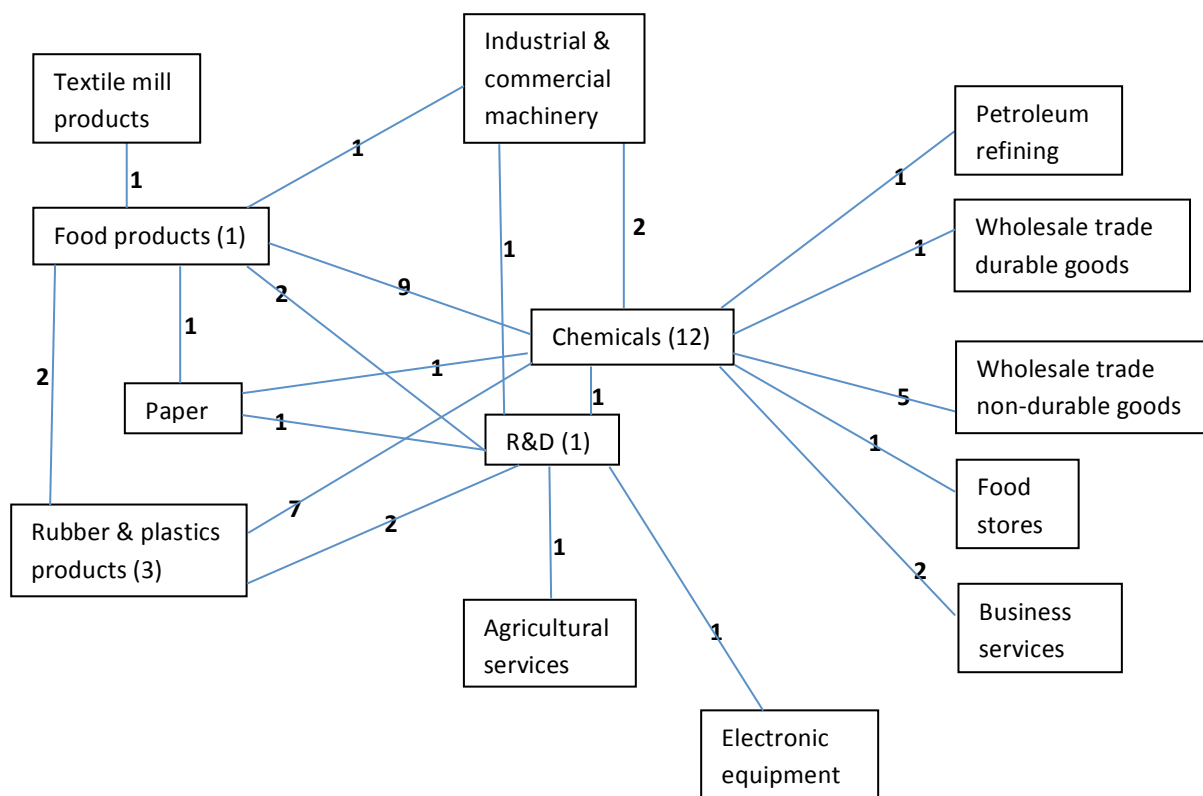
The results of the paper illustrate that organizations that enter into an alliance in the field of bio-plastics often come from different industries, and that these organizations enter an alliance to access complementary resources (see Figure 1 and Figure 2). Figure 1 illustrates that alliances in the bio-plastics field often occur between organizations from the chemical industries and industries that produce food and rubber and plastics.

The main contribution of the paper lies in proposing a new form of legitimacy that is important in the transition to sustainable technologies and that can be achieved by alliances. Legitimacy is a generalized perception that actions of an entity are desirable, proper, or appropriate relative to how the currently prevailing logics evaluate these activities (Dacin et al., 2007; Greenwood et al., 2011). Legitimacy is an important concept when studying the transition to new and sustainable technologies. As sustainable innovations often compete with already existing technologies and products, a crucial challenge for organizations developing sustainable innovations is to convince others of the legitimacy, appropriateness, and desirability of these innovations relative to how the currently prevailing institutional setting evaluates the innovations (Rennings, 2000; ref paper 3).

It is argued that legitimation, i.e. the social justification of an actor or activity, such that the actor or activity is publicly validated or endorsed (Perrow, 1961; Dacin et al., 2007), can be an outcome of alliances. The legitimacy-based functions of alliances have, however, not received much attention (Dacin et al., 2007; Lin, 2012). This paper builds on the framework by Dacin et al. (2007), who have proposed different types of legitimacy that can be achieved by alliances. These types of legitimacy include market, relational, social, investment, and alliance legitimacy (see Table 1).

This paper contributes to the literature on the legitimating role of alliances, by emphasizing the role of technology as a way to achieve market and social legitimacy for a firm and by proposing a new type of legitimacy: technology legitimacy. The paper identifies 33 alliances in which firms try to obtain market legitimacy based on the technology of a partner. In 39 alliances firms attempt to obtain social legitimacy based on the technology of a partner or a technology that was developed in the alliance. Technology legitimacy differs from the other types of legitimacy, because it is not aimed at trying to obtain legitimacy for a firm, but for a particular type of technology. In our study on the field of bio-plastics, we present evidence on 41 alliances that aim to achieve technology legitimacy. These alliances aim to support or demonstrate the worthiness of sustainable innovations in the field of bio-plastics to actors outside the alliance. One example of such an alliance is the Plant PET Technology Collaborative (partners: Coca-Cola, Ford, Heinz, Nike, Procter & Gamble), which builds on Coca-Cola's PlantBottle technology. This alliance *"seeks to drive the development of common methodologies and standards for the use of plant-based plastic including life cycle analysis and universal terminology. The brands will then promote these standards with the expectation that they will be endorsed and used worldwide"* (PlasticsToday, 2012). In other words, this alliance tries to legitimate specific innovations by establishing institutions.

Figure 1. Industrial background of alliance partners in bio-plastics field*



* The numbers refer to how many times an alliance occurs between organizations from the different industries. Industrial background is established on the basis of Standard Industrial Classification codes at the 2-digit level, referring to major industrial groups (www.osha.gov/pls/imis/sic_manual.html).

Figure 2. Reasons for entering into an alliance in bio-plastics field

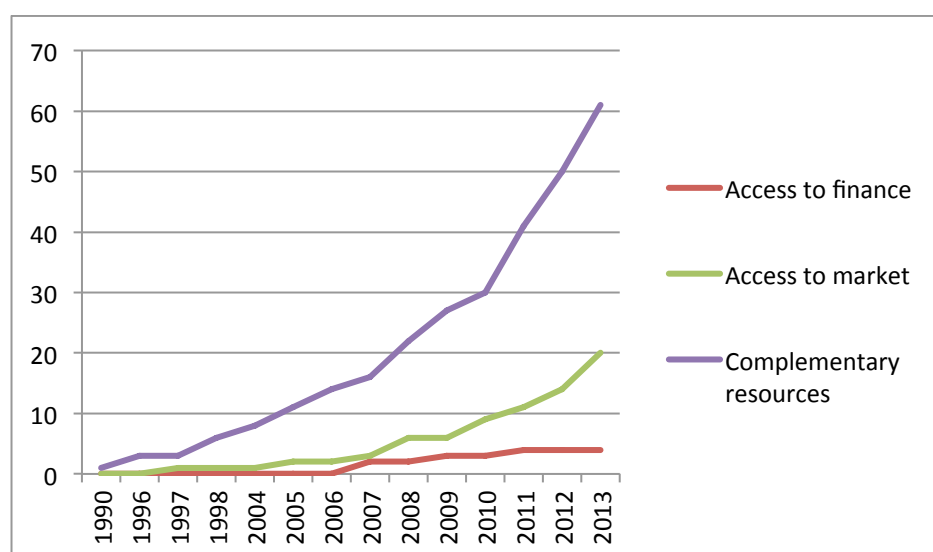


Table 1 – Legitimizing roles of strategic alliances (adapted from Dacin et al., 2007)

	Market legitimacy	Relational legitimacy	Social legitimacy	Investment legitimacy	Alliance legitimacy
Definition	Rights and qualifications to conduct business in a particular market	Worthiness to be a partner	Conformity of the firm to societal rules and expectations	Worthiness of the business activity	Validity or appropriateness of strategic alliances
Motive for entering alliance	To increase one's legitimacy in a geographical or product market	To increase one's legitimacy as a good partner	To increase one's legitimacy as a socially responsible firm	To increase the legitimacy of the business activity	To legitimate alliance use
Source of legitimacy	Partner's legitimacy in the market	Relationship with partner	Partner's social image	Partner's support and confidence in the business activity	Isomorphism
Target	Governments, suppliers, customers	Potential ties	Public interest groups, local communities, customers	Board of directors, corporate executives, venture capitalists, shareholders	Other organizations, parent firms