Partial Complementary Alliances in Composite Good Markets

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Abstract

This paper investigates full and partial alliances among complementary firms. One large firm who provides a composite good A competes with N firms, each providing a complementary component of a differentiated composite good B, in a Bertrand fashion. The market size of composite good B is relatively small, due to some extent of incompatibility. The analysis first shows that a full alliance of all existing N firms is unprofitable when $N = 2$ ($N = 3$) and the degree of product differentiation is small (sufficiently small). However, a full alliance of $N \geq 4$ is always profitable. The partial alliance analysis shows that the alliance size (the number of firms in the alliance) necessary for ensuring the profitability of the alliance increases, as the degree of product differentiation becomes smaller. Given a certain degree of product differentiation, the size of profitable alliance becomes smaller (larger), as the number N increases from a small (large) given number. Furthermore, all the conditions necessary for ensuring the profitability of a full/partial alliance are independent of the market-size differentials or compatibility, however, the smaller the differentials or the greater compatibility, the larger the magnitude of the gains/losses.

Keywords: Complementary alliances, full alliances, partial alliances, product differentiation.

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