The development of innovation networks is linked to the rise of “Open Innovation” strategy and a complex technology which makes firms (even largest innovative ones) unable to meet the increasing demand for knowledge by their internal resources alone. Consequently, innovative firms found their stray in external resources beyond their boundaries (Hagedoorn et al., 2000; Bayona et al., 2001; Tether, 2002; Miotti and Sachwald, 2003), which can complement their internal technological resources. A review of the literature about innovation networks and cooperation relationships (mainly R&D cooperation strategy), shows that most of the works are devoted to innovation in manufacturing sector (Hall et al., 2000; Miotti and Sachwald, 2003; and Faems et al., 2005). Innovation networks in services are rarely addressed despite the growing amount of literature about the economic role of services and innovation in services) (Gallouj, 2002, Gallouj and Windrum, 2009; Djellal, 2009). Moreover, without ignoring the public-private cooperation, a large amount of the innovation networks literature was mainly focused on cooperation between private organizations or actors (competitive firms, suppliers…), i.e. “private-private innovation cooperation”. So, our aim in this paper is to contribute filling the gap in the literature regarding the contribution of service firms in innovation network as well as the importance of collaboration with public agents. For achieve this goal, we will compare three modes of cooperation strategies. In the first, service firms cooperate with other private partners only (e.g. suppliers, rivals) forming “Private-Private Innovation Networks”. In the second, cooperation strategy, service firms cooperate with public actors only (e.g. universities, public research centers) forming “Strict Public Private Innovation Networks”. For the last one, firms cooperate with both public and private actors forming “Extensive Public Private Innovation Networks”. In addition, we will compare between local (national) public private innovation networks and global (international) public private innovation networks, as well as make a comparison between the two public innovation policies: public cooperation (public private innovation networks) and public subsidy. The theoretical background of firms’ cooperation for innovation (innovation network) strategy, and their influences on firms’ innovation activities, will be built on multiple theoretical bases from innovation networks analysis and innovation output. In these theoretical bases innovation network may include heterogeneous actors (like public and private) forming either private-private innovation networks or public private innovation networks, where innovation outcome will differ according to the cooperation partners (Messner, 1998; Morgan and Nauwelaers, 1999; Doz et al., 2000; Tether, 2002; Nauwelaers and Wintjes, 2003; Nieto and Santamaria, 2007; Arranz & de Arroyabe, 2008). Differences between national and international cooperation were also confirmed in these theoretical bases (Kang and Sakai, 2000; Rycroft, 2007). To test these theoretical implications empirically, we applied logistic model on the available data about cooperation for innovation from the fourth community innovation survey (CIS4) in order to explore the significance of cooperation for innovation for French innovative service firms, i.e. the relationship between cooperation for innovation and the realization of new modes of innovation. We took into account that innovative firms can pursue more than one strategy for cooperation. For example, as regard the character of cooperation partners (public or private), firms can cooperate with public actors, private actors or both so as to enhance their innovation output. In the other hand, firms can share knowledge
and technologies with local, national or international partners, i.e. they can form national innovation network or global innovation network. We found that all modes of innovation output (product, process, organizational and market innovation) were positively affected by cooperation strategy. Thus, cooperation for innovation was one of the successful strategies that were employed by the French service innovative firms to increase innovation output. We found heterogeneity of cooperation effect, where the different innovation output modes were not equally affected by the three innovation networks. In other words, different cooperation strategies may be employed to produce different innovation output. For example, extended-PPIN was employed by service firms to produce the most efficient amount of product innovation, and private-private innovation network was the most efficient strategy in case of process innovation. We found also heterogeneity on the level of public partner mode (university or R&D organizations). For example cooperation with universities and higher education seemed to be more efficient compared with cooperation with R&D organizations if firms want to produce any type of innovation modes. Geographical location (national or international) of cooperation partners was also found to have heterogeneous effect on innovation output. Service firms were more efficient in terms of product innovation when they cooperate with international private partners (global private-private innovation networks) and in terms of process innovation when they cooperate with and national private partners (local private-private innovation network). National public partners (local PPINs) were the efficient strategy for organizational innovation, and international public partners (global PPINs) were the most efficient strategy for producing market innovation. Finally, in comparing public cooperation and public subsidy (two different public innovation strategies), we found that direct involvement of public actors as main actors in PPIN was more efficient for service firms to boost innovation output than the public subsidy (indirect involvement in innovation process).