

# The interplay of regional systems of innovation, strategic alliances and open innovation

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Modern biotechnology is a driving force and a full grown industry in the international economy with ongoing and rapid innovations. The emphasis of this dissertation is on the valorization of red biotech, i.e. pharmaceutical and healthcare applications. Belgium has firmly established itself as an international red biotechnology country, with a world class biotechnology industry in the Flanders and Wallonia bioRegions.

Developing a domestic biotechnology industry - and hence new biotechnology firms - can be influenced by regional policy. The pharmaceutical-biotechnology regional and sectoral innovation system is characterized as an international and dynamic network architecture involving numerous players engaged in drug discovery. Regional governments and dedicated public and private network organizations have supported emerging new biotechnology firms by providing critical resources and by promoting an institutional environment that has enabled partnerships between universities, highly specialized research centers, small science based academic spin-offs and corporate spin-outs and large global pharmaceutical companies. Both policy and big firms look at the new biotechnology firms from a strategic point of view. The policy objective is the emergence of new and sustainable firms in the region; the big firms objective is the filling or renewal of the pipelines of products.

New biotechnology firms are both beneficiaries and targets of strategic partnering alliances with large and global (bio)pharmaceutical companies. A number of the Belgian new biotechnology firms hold a nodal position as "most preferred partner" with multiple alliances in dynamic R&D networks. They have a high degree of integration into global technological networks through strategic alliances. Strategic alliances and open innovation are commonly leveraged. Despite their small size and relative immaturity, some of the new biotechnology firms are able to adopt innovative business models by providing R&D and services to large biopharmaceutical companies and by cooperating with them through open innovation.



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He is a regular speaker and invited workshop expert at international conferences, presenting his research and publications in the field of small business management, entrepreneurship, entrepreneurship education, startup ecosystems, new biotechnology firms (new technology based firms), open innovation, regional systems of innovation and public-private partnerships. He is also member of the review boards of a number of national and international journals.



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### The Case of New Biotechnology Firms in the bioRegions of Flanders & Wallonia (Belgium)

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