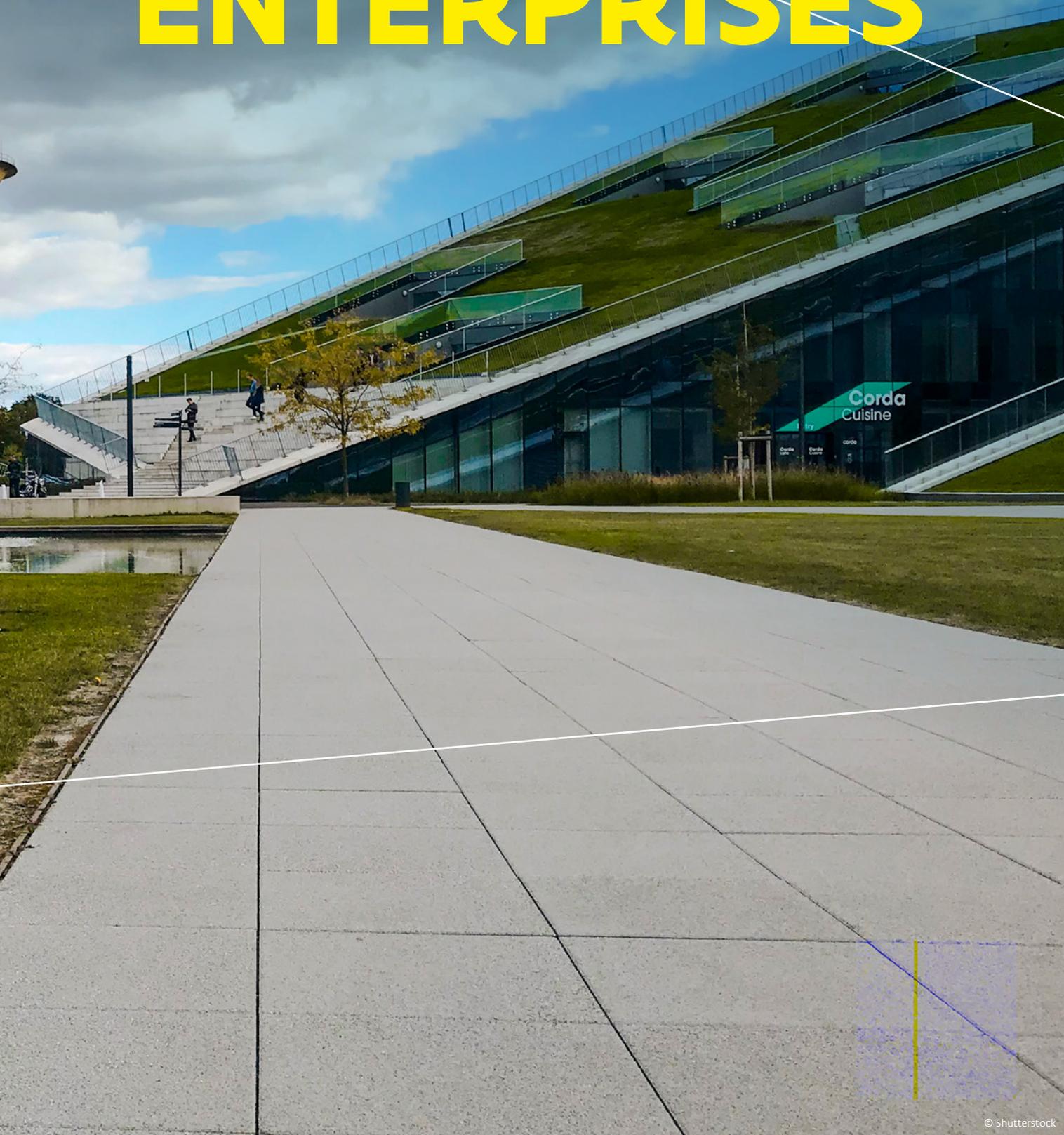


CHAPTER 4

ENTERPRISES





1 BUSINESS ENTERPRISE SECTOR

Enterprises are of major importance within the STI system in Flanders. **76% of R&D** in Flanders was funded by the business enterprise sector in 2019. However, they are a very heterogeneous group. **Most large companies** are clearly innovation-active. Some of them have significant research budgets. Given the industrial texture in Flanders, most of these large enterprises belong to multinational groups, so that their research policy is not exclusively determined in Flanders.

Alongside the large, innovation-intensive companies, a group of **high-technology SMEs** has arisen in recent years and continues to grow steadily. Moreover, even though the large majority of SMEs do not conduct research directly, many of them outsource research to some extent, so that they can also be regarded as innovation-oriented.

According to the Community Innovation Survey (CIS) carried out in 2019, 70% of all companies (2016-2018) in Flanders can be called innovative (= had either product innovations, business process innovations and/or ongoing or abandoned innovation activities). Nevertheless, innovation continues to be **largely concentrated** in industry and large companies.

International comparisons demonstrate that the **share of people employed in (medium) high-tech industry and high-tech services** in Flanders is almost comparable to the EU average (8.9% versus 9.0% for the EU-27 in 2019). The R&D activities (expenditure) within companies in Flanders are mainly focused on the following high-tech sectors (2019): chemicals and pharmaceuticals (NACE 20-21) account for 33.8% of total BERD (based on a sample); motion picture, video and TV production, computer programmes, engineering, and technical testing and analysis activities (NACE 59-63, 71-72) account for 20.6%. information technology, electronic products, optical products and electrical equipment (NACE 26-27) account for about 10.5%; machinery and transport (NACE 28-30) account for more than 9.1%.

2 INFRASTRUCTURE AND FINANCIAL INTERMEDIARIES

In Flanders, several science parks, research parks, incubators and accelerators offer facilities for research-based young companies and innovative enterprises. Often, these are spin-off companies from a university or a PRO and are located close to the knowledge centre in question. In some cases, an incubator is specifically oriented towards a particular scientific area.

Universities and strategic research centres are increasingly able to professionally guide spin-off companies, e.g. with finding the appropriate CEO, financial structure, and administrative issues. An important trend is the establishment and elaboration of different types of incubators. An overview of **business centres and incubators** can be found at www.vlaio.be/nl/andere-doelgroepen/foreign-investors/information-foreign-investors/finding-right-location.

The various private risk capital funds providers in Flanders include the large banks in Belgium, and specific funds such as **Capital@Rent**, **Capricorn**, **Down 2 Earth Capital**, **Falcon Fund**, **Hummingbird Ventures**, etc. **GIMV** (Flanders Investment Company) is Belgium's most important provider of private equity and venture capital and also a major European and international market player. It was initially set up by the Flemish Government, which still holds a minority stake in the company.

There also exist several funds that are linked to the Flemish universities or the strategic research centres. Examples of these are:

- the **Gemma Frisius seed capital fund** (KU Leuven)
- the multi-sector **Qbic Fund** (UGent VUB, UA and VITO)
- **Imec.xpand**, aimed at start-up companies in the sector of Internet of Things (IoT)
- **Imec.iStart** offering coaching, support and infrastructure to (future) technology start-up companies (ranked in the top 5 of UBI Global rankings)

- **V-Bio Ventures Fund** (VIB) investing in European start-up companies and young companies in biopharmaceuticals, diagnostics, and agricultural improvements. It was initially set up by the Flemish Government, which still holds a minority stake in the company.

It is noteworthy to mention the following initiatives:

- **Business Angels Network Flanders (BAN Vlaanderen)**: a platform in which starting or growing entrepreneurs seeking risk capital are matched with informal private investors, the so-called "business angels". The latter offer not only money but also their own know-how, experience and contacts. BAN Vlaanderen is a marketplace where demand and supply meet, rather than an investment fund.
- **FINMIX**: a project from VLAIO aimed at companies with innovative challenges, growth ambitions or take-over plans, that use risk capital for their plans. It provides the possibility to these businesses to propose their plan to a panel of funding experts who will provide advice on the best funding mix.

An overview of risk capital providers in Flanders is available at the URL: www.vlaio.be/nl/publicaties/overzicht-van-de-risicokapitaalverschaffers-vlaanderen.

3

COLLABORATION: INNOVATIVE NETWORKS AND RESEARCH- BUSINESS LINKS

Collaboration is an important aspect of Flemish innovation policy. It enables companies and knowledge centres to develop their internal know-how and allows them to tackle common technological issues efficiently, by using a shared platform for the demand and supply of R&D and other innovative matters.

3.1

CLUSTER POLICY

On 4 March 2016, the Flemish government approved the decree regulating support for innovation clusters in Flanders. The **objective** of the cluster policy is to unlock untapped economic potential and to increase the competitiveness of Flemish companies through active and sustainable cooperation between actors. The policy focuses on partnerships between Flemish companies. These companies are characterised by their growth ambitions, a high level of innovation awareness and their international outlook. In addition, they must be open to cooperation with other companies and knowledge centres, both for the realisation of their individual business objectives and for contributing to an increase in the competitiveness of a large group of Flemish companies.

Within the cluster, a cluster organisation acts as the facilitator of the network and the representative of the cluster members. Cluster organisations can be financially supported by the Flemish government for the implementation of their role as facilitators. With a support percentage of 50%, the companies should annually collect an equivalent amount of co-financing for the operation of the cluster organisation. In addition to the financial support, VLAIO offers operational support, so that the cluster organisations can optimise their operations and become better at what they already do.

The Flemish cluster policy distinguishes two types of clusters:

The **innovative business networks** are typically smaller initiatives. They often arise bottom-up from companies that want to focus on a specific domain that has opportunities to increase their competitiveness. Innovative business networks are therefore initiatives that derive from the exploration of new, emerging domains. They receive support from the Flemish government for three years. An overview of the innovative business networks that are or were supported by VLAIO is included in Annex I.

The **spearhead clusters** fit in with important strategic areas for Flanders. These are large-scale initiatives that receive funding for ten years to expand their operations. Flanders has seven spearhead clusters:



Catalisti in the domain of sustainable chemistry. The cluster has four main innovation programmes: "Renewable Chemicals", "Sidestream Valorisation", "Process Intensification and Optimisation" and "Advanced Sustainable Products".



Flanders' Food in the domain of agro-food. The cluster has two knowledge-driven strategic objectives (lead in knowledge and lead to knowledge) and two business-driven strategic objectives (accelerate efficient & effective innovation and cross/create value chains). The knowledge-driven strategic goals will focus on (1) World Class Food Production, (2) Resilient & Sustainable Agrifood Systems and (3) Personalized Food Products & Healthy Diets.



SIM (Strategic Initiative Materials) in the domain of advanced materials. SIM aims to further strengthen the favourable position of the Flanders Materials related eco-system, with strengths such as materials for 3D printing, nanoparticle production, handling and encapsulation.



Flux50 in the domain of energy (smart grids). 5 innovator zones have been selected: energy harbours, micro grids, multi-energy solutions for districts, energy cloud platforms, intelligent renovation.



Flanders Logistics cluster (VIL) in the domain of specialised logistics. Its programming is centred around four main themes: (1) digitization with three sub-themes: smart technology, business models and data management, (2) sustainability themes like CO₂ reduction and energy efficiency objectives for logistics in smart cities, circular and sharing economy, infrastructure (3) ambition 'Flanders gateways', i.e. Flanders as a global connected trading partner and (4) omni-channel distribution systems for various application.



Blue cluster with an emphasis on sustainable economic activities related to the North Sea and beyond. The cluster is active in (1) coastal protection and mineral resources, (2) renewable energy and fresh water production, (3) maritime connectivity, (4) sustainable food production and marine biotechnology, (5) blue tourism and (6) ocean pollution.



flanders.healthTech focuses primarily on the crossover domains of biotech, medical and digital technologies where technological convergence generates new opportunities. To maximise its impact and reach, the focus of the cluster is not limited to the intersection where all three domains overlap, but also includes crossover opportunities where at least two of the three domains join forces.

3.2 LOCAL AND THEMATIC INITIATIVES

Examples of **place-based** initiatives, driven by one or more knowledge actor(s), and supported by various public stakeholders are Leuven Inc., Leuven Mindgate, or Ghent Bio-Energy Valley (GBEV) and BBEU (Bio-Base Europe). Thematic or sector-oriented organisations and networks exist in a broad variety. Examples include the FlandersBio network (life sciences – biopharmaceuticals, medical technologies or agricultural / industrial biotech products), Agoria Flanders (federation for the technology industry), MedTech Flanders (medical technology). The “Agoria International Business” helps technology companies increase their international market share and profitability by identifying business opportunities abroad.

3.3 COLLECTIVE (RESEARCH) CENTRES

Collective research centres are recognised as a scientific organisation by BELSPO (and eligible for the scheme of reduced social contributions on researchers’ salaries). Their main activities include collective research, various services of a scientific or technical nature (provided individually to their members), dissemination of technical information and training. The collective centres were founded after WWII by **the Belgian business federations**, usually by way of an association, and over the years several of other institutes have gained a similar status. The target groups of their applied research activities are either defined by sector or by theme. In addition, they often participate in European, federal and Flemish research programmes and carry out self-generated research to maintain their overall levels of knowledge and expertise.

These centres conduct (contract) research at the request of individual companies. These centres, including the equivalent organisations, are:

- Belgian Institute for Wood Technology and the Wood Training Centre (wood.be);
- Belgian Welding Institute (BWI);
- Belgian Research Centre for the Cement Industry (CRIC);
- Belgian Road Research Centre (BRRC);
- Scientific and Technical Service Centre for the Belgian Textile Industry (Centexbel);
- Belgian Building Research Institute (BBRI);
- Scientific and Technological Research Centre for Diamond (WTOCD);
- Collective Centre for the Belgian Technology Industry (SIRRIS), which includes several sub-sectors (e.g. “Aeronautics, Space, Security & Defence Industries”);
- Coatings Research Institute (CORI);
- Research Centre for of certification and standardisation (CRIG-OCCN);
- Belgian Ceramic Research Centre (BCRC) (includes ceramics, glass and bricks industry);
- Metallurgic Research Centre (CRM) (for ferro and non-ferro metals);
- Tecnolec / Volta (electrical business).



3.4 RESEARCH – BUSINESS LINKS

The Flemish Government has developed a number of initiatives to **increase the valorisation** of research results, to better diffuse technology, and to strengthen the direct links between companies seeking to innovate and researchers from higher education institutions. **Support** is available to companies, institutions, networks and private individuals (researchers). In addition, promotional campaigns, such as “Ik innoveer!” - “I innovate!” with focus at **low innovation-intensive companies and SMEs** have been set up to better diffuse innovation among smaller and less-technological firms.

Other examples of current measures towards business include:

- **Baekeland mandates** and **innovation mandates** allowing researchers to conduct research with a specific business-oriented purpose in close relation with the business.
- support via the **TETRA Fund** aimed at applied-research projects.
- the support for the university colleges to professionalise the knowledge diffusion towards SME’s **“Blikopener”** (“Mind opener”).
- ‘Collective Research & Development and Collective Knowledge Dissemination/Transfer (**COOCK**)’ is a policy instrument that focuses on groups of companies, with the aim of valorising (basic) research results by accelerating the introduction of technology and/or knowledge.
- “Proeftuinen” (**Living Laboratories**, or test beds), were set up in various domains. These are structured test environments in which organisations can test innovative technologies, products, services and concepts, using a representative sample of individuals, who are used as testers in their normal living and working environments. Current Living Labs are active in the fields of Industry 4.0 and Smart cities.

The measures geared towards knowledge institutes are discussed under chapter 3.

4

BUSINESS EXPENDITURE ON R&D

Business Expenditures on R&D (BERD) represent 6,705 billion euro, of which the **chemical and pharmaceutical** sector led the way with 34% (2019). Other main performers were motion pictures, video and TV production, computer programmes, engineering, technical testing and analysis activities. The top-50 R&D-active companies jointly represent almost 60% of all R&D expenditures in Flanders. Of all total foreign investments in Flanders in 2019 (representing 5.20 billion euro), 22.5% took place in the R&D sector.

In **2019**, the R&D intensity in the business sector was 2.40%, in increase in comparison with 2018 (2.04%). Flanders therefore ranks higher than the EU-27 average, France, the Netherlands, Finland, Germany and Austria, but lower than Japan and Sweden.

For more information on BERD, see Annex III.