



## Smart Guide to entrepreneurship support through clusters



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# Table of content

Table of content.....	4
List of Figures.....	5
List of Tables.....	5
1 Introduction.....	6
1.1 Cluster relevance in promoting entrepreneurship in EU policy.....	6
1.2 Purpose and target audience of the Smart Guide.....	7
1.3 Structure of the Smart Guide.....	8
2 What constitutes an entrepreneurial ecosystem.....	9
2.1 Key definitions and concepts.....	9
2.2 Overview of the mapping of Europe's start-up and scale-up ecosystem.....	14
2.3 How can clusters boost entrepreneurship?.....	15
3 How to promote entrepreneurship through clusters.....	19
3.1 The role of clusters .....	19
3.2 Boosting early-stage entrepreneurship.....	21
3.3 Fostering start-ups .....	24
3.4 Support for scale-ups.....	29
3.5 Building markets and value chains .....	32
3.6 What are the main perceived challenges?.....	33
4 Good practice examples .....	35
4.1 Selection and shared attributes of good practice examples .....	35
4.2 Combining services to address different phases of the entrepreneurial life cycle .....	37
4.3 Different implementation mechanisms and organisations .....	39
4.4 Evolving over time .....	40
5 Conclusions and recommendations.....	43
Annex A - Good practice factsheets.....	45
A.1 Scale-Up Denmark.....	45
A.2 Bioindustry Park Silvano Fumero .....	47
A.3 EuraTechnologies incubator and accelerator .....	49
A.4 The Bioeconomy Region .....	51
A.5 AplusB.....	53
A.6 EXIST – University-Based Business Start-Ups .....	55
A.7 Genopole Cluster Entrepreneurship Support.....	57

A.8	'Pre-Acceleration Point for Polish Start-ups' South Poland Cleantech Cluster, SPCleantech	59
A.9	MedTech Accelerator.....	61
A.10	Medical Valley Europäische Metropolregion Nürnberg, Medical Valley EMN .....	63
A.11	Milwaukee 7 .....	65
A.12	Supply Chains and Logistics Excellence Artificial Intelligence, scale ai.....	67
Annex B -	Initial short-list of programmes supporting start-ups and scale-ups.....	69
	Bibliographic references .....	72
	European Observatory for Clusters and Industrial Change .....	75

## List of Figures

Figure 1 - Start-up and Scale-up criteria.....	11
Figure 2 - Key elements of the entrepreneurial ecosystem .....	12
Figure 3 - Key elements an ecosystem should provide to make start-ups successful.....	17
Figure 4 - Transition towards high-growth oriented enterprise policies highlights the key role of clusters.....	18
Figure 5 - How clusters can further support entrepreneurship .....	21
Figure 6 - The selected good practice examples of entrepreneurship support programmes .....	36
Figure 7 - Business life cycle focus of the selected good practice examples .....	37
Figure 8 - EXIST: From promoting an entrepreneurial culture to supporting start-up development.....	41
Figure 9 - Experimenting, learning and scaling of the Scale-up programme within Milwaukee 7 .....	42

## List of Tables

Table 1 - How cluster organisations support entrepreneurship .....	20
Table 2 - Examples of components of the selected good practice examples by entrepreneurial life cycle stage.....	38
Table 3 - Implementing organisations and the role of cluster organisations .....	39
Table 4 - Do's and Don'ts for boosting entrepreneurship through clusters.....	44

# 1 Introduction

In order to place this Smart Guide in its proper context, the following chapter presents the policy framework for entrepreneurship support through clusters and describes its relevance within the renewed EU industrial policy strategy. The purpose and target audience of the Smart Guide and its structure are also discussed.

## 1.1 Cluster relevance in promoting entrepreneurship in EU policy

In recent years, the importance of clusters as drivers of favourable business environments, innovation and entrepreneurial ecosystems has been increasingly recognised as emphasised in the EU Entrepreneurship 2020 Action Plan<sup>1</sup>: *"To thrive, entrepreneurs and SMEs need specific, customised expertise that can help them develop competitive advantages and benefit from global value chains and shared management of human resources. Clusters, business networks or other types of associations of enterprises can provide such a supportive environment as they bring together the relevant actors from business, education, research, and the public sector".*

The Start-up and Scale-up Initiative<sup>2</sup> calls for actions to "connect clusters and ecosystems across Europe, as well as to bring stronger coherence between the different EU initiatives in particular by linking up national and regional Ministries, innovation agencies and other stakeholders and ecosystems". By way of follow-up to the EU Industry Day in February 2018, the Member States in their Council Conclusions of March 2018 called for "*the*

*further development of European cluster policy, with the aim of linking-up and scaling-up regional clusters into cross-European world-class clusters, based on smart specialisation principles, to support the emergence of new value chains across Europe."*<sup>3</sup> In May 2019, they further highlighted clusters as key for EU industry policy and as an important tool to support the growth of small and medium-sized enterprises (SMEs).

The European Commission proposal on establishing the "Programme for single market, competitiveness of enterprises, including SMEs and European statistics" of June 2018<sup>4</sup>, reaffirmed the strategic role of clusters for channelling support to SMEs in the following areas: uptake of advanced technologies, new business models, low-carbon and resource-efficient solutions, creativity and design, skills upgrading, talent attraction, entrepreneurship acceleration, and internationalisation. To improve SME competitiveness and accelerate their growth, the European Commission is proposing Joint Cluster Initiatives that connect specialised ecosystems throughout Europe and create new business opportunities.

To this end, modern cluster policy follows a systemic approach, encouraging different actors in the entrepreneurial ecosystem (e.g.

<sup>1</sup><https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52012DC0795&from=EN>

<sup>2</sup><https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52016DC0733&from=EN>

<sup>3</sup> <https://www.consilium.europa.eu/en/press/press-releases/2018/03/12/eu-industrial-policy-strategy-council-adopts-conclusions/>

<sup>4</sup>[https://eur-lex.europa.eu/resource.html?uri=cellar:8a43c8d3-6a31-11e8-9483-01aa75ed71a1.0002.03/DOC\\_1&format=PDF](https://eur-lex.europa.eu/resource.html?uri=cellar:8a43c8d3-6a31-11e8-9483-01aa75ed71a1.0002.03/DOC_1&format=PDF)

universities, business partners, investors) to collaborate across regions and sectors<sup>5</sup>. In EU cluster policy, entrepreneurship support relates to underpinning the entrepreneurial innovation ecosystem and more specifically new and high-growth businesses in specific industries. Supporting entrepreneurship through clusters thus implies addressing all stages in the business cycle coherently, developing new industrial value chains and emerging industries. The formation of cross-sectoral and cross-regional cluster collaborations facilitates these processes. Cross-regional collaboration matters because it addresses the geographical limit of clusters, captures and reinforces complementarities between regional ecosystems, establishes European innovation roadmaps, and finally favours the exchange of best practice and lessons learnt.

The European Commission and Member States have supported many initiatives aiming to help start-ups connect with the right partners and create the conditions for start-up growth. Examples of such initiatives are the European Strategic Cluster Partnerships for going international (ESCP-4i) and for smart specialisation investments (ESCP-S3) supported by COSME and the clusterprojects for new industrial value chains (INNOSUP-1 supported by Horizon2020).

## 1.2 Purpose and target audience of the Smart Guide

The purpose of this Smart Guide is to stimulate policy learning and provide guidance in designing and implementing programmes that accelerate the creation of start-ups, spin-offs and scale-ups through a cluster approach. The focus of this Smart Guide is on innovative entrepreneurship as a key driver of change in declining industries, as a development lever in emerging industries, and as a source of innovativeness and dynamism in mature industries.

The guide offers practical help by outlining some of the distinguishing features of growth-oriented entrepreneurship policies, presenting examples of good practices of entrepreneurship support programmes delivered through a cluster (i.e. systemic) approach or by a cluster organisation.

Some of the examples that feature in this Smart Guide were also presented in the discussions of the European Cluster Policy Forum on 15 November 2018 that focused, amongst others, on how clusters can accelerate entrepreneurship.<sup>6</sup>

The guide is addressed to cluster policy-makers and policy-makers in charge of industrial, innovation, entrepreneurship, SME and regional policy wanting to develop programmes that boost entrepreneurship in emerging industries and in specific value chains.

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<sup>5</sup>European Commission, 2016. Smart Guide to Cluster Policy.  
<http://s3platform.jrc.ec.europa.eu/documents/20182/84453/Smart+Guide+to+Cluster+Policy/fd0f16b9-0759-43ca-b950-ec0192e220c8>

<sup>6</sup> [https://ec.europa.eu/growth/content/third-european-cluster-policy-forum-improving-linkages-and-synergies-cluster-policy\\_en](https://ec.europa.eu/growth/content/third-european-cluster-policy-forum-improving-linkages-and-synergies-cluster-policy_en)

## 1.3 Structure of the Smart Guide

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This Smart Guide includes the following chapters:

- *Chapter 2 - What constitutes an entrepreneurial ecosystem:* provides conceptual clarification about the terminology used throughout the Smart Guide. It summarises academic insights into the linkages between clusters, start-ups and scale-ups.
- *Chapter 3 - How to promote entrepreneurship through clusters:* illustrates how support can be delivered effectively at different stages of the entrepreneurial life cycle. It flags the main advantages of pursuing a cluster approach, features some tips and tricks, and points to some examples.
- *Chapter 4 - Examples of good practice in entrepreneurship support through clusters:* defines a set of key principles of good practice and illustrates examples of cluster programmes that are successfully promoting entrepreneurship in different industries and by combining different types of instruments and implementation frameworks.
- *Chapter 5 - Conclusions and recommendations:* Building upon the evidence gathered to prepare this Smart Guide, this chapter presents the main conclusions and a number of Do's and Don'ts for cluster and entrepreneurship policy-makers.

The Annexes provide 2-page fact sheets for each of the twelve good practice examples used throughout the report and the initial shortlist of 36 programmes from which they were identified.

# 2 What constitutes an entrepreneurial ecosystem

Clusters have a key role in promoting entrepreneurship. There is clear evidence that clusters form collaborative environments where public and private actors can provide a coordinated and coherent mix of support instruments for accelerating entrepreneurship.

## 2.1 Key definitions and concepts

In order to discuss clusters' influence on entrepreneurship, it is important to have a common understanding of the relevant key definitions and concepts.

**Clusters** can be defined as a "group of firms, related economic actors, and institutions that are located near each other and have a sufficient scale to develop specialised expertise, services, resources, suppliers and skills".<sup>7</sup> They are ecosystems of companies and associated institutions in an industry connected through commonalities and externalities. Compared to other ecosystems, a distinctive feature of clusters is the relevance of collaborations and partnerships between different actors. Cluster members include a large variety of actors, such as product or service companies, suppliers of specialised inputs, financial institutions, firms in related industries, government agencies, institutions providing training and education and specialised infrastructure providers, which together establish a complex network of economic and social interactions<sup>8</sup>. Clusters are both a concept and an economic reality which revealed effects can be measured statistically.

**Cluster policies and cluster initiatives** refer to the array of instruments that are deployed as a result of political commitment or organised efforts to support cluster development, transition and growth. They are usually developed through bottom-up and multi-stakeholder approaches that aim to build and leverage collaboration and partnership for improving the competitiveness of cluster members.

**Cluster organisations** are legal entities defining and structuring cluster governance. They act as facilitators of cluster partnerships, as providers of specialised innovation services in specific industries and as implementing agencies of cluster initiatives<sup>7</sup>.

The European Commission defines **entrepreneurship** as "*an individual's creative capacity, independently or within an organisation, to identify an opportunity and to pursue it in order to produce new value or economic success*"<sup>9</sup>. Entrepreneurship is understood as a multidimensional concept that includes economic, cultural and social aspects and is expected to contribute to economic growth<sup>10</sup>. It can be categorised as necessity-based or opportunity-based, which can both be innovative. Innovative entrepreneurship is most relevant for boosting

<sup>7</sup> European Commission, 2016. Smart Guide to Cluster Policy. See [https://ec.europa.eu/growth/content/smart-guide-cluster-policy-published-0\\_en](https://ec.europa.eu/growth/content/smart-guide-cluster-policy-published-0_en)

<sup>8</sup> [www.clustercollaboration.eu/cluster-definitions](http://www.clustercollaboration.eu/cluster-definitions)

<sup>9</sup> European Commission, 2003. Green Paper on Entrepreneurship in Europe, Brussels, COM(2003) 27

<sup>10</sup> International Business University of Gdańsk, 2012. *Entrepreneurship and its role from the European Union perspective*.

regional industrial change, adaptation and self-organisation since it involves the development of new products, services or processes<sup>11</sup>.

In cluster policy, entrepreneurship is defined both in terms of new venture creation and in relation to firms' capacity to grow and embrace new business models by exploiting new technologies (e.g. Internet of Things, additive manufacturing, artificial intelligence) and megatrends (e.g. globalisation, demographic changes). This view draws upon Schumpeter's definition of entrepreneurs as innovators able to combine productive factors to generate new products, production processes, markets or value chains<sup>12</sup>. Entrepreneurship defined in this broad sense is central for underpinning industrial transformation processes since newly established firms and high-growth firms have a considerable impact on job creation, and on improving the innovation and competitiveness profile of national and regional economies<sup>13</sup>. Growing or attracting new firms is also important for innovative dynamics since co-located firms within related industries enhance the ability to create knowledge by variation and a deepened division of labour<sup>14</sup>.

There is no formal, commonly agreed definition of a start-up company. According to the European Start-up Monitor<sup>15</sup> the term **start-up** commonly draws on three criteria, namely: i) being younger than ten years or five

years depending on the sector; ii) featuring highly innovative technologies, services, products and/or business models; and iii) having/striving to grow the number of employees and/or the markets in which they operate. For a venture to be considered a start-up, and not just a newly established business, the first criterion needs to apply jointly with one or both of the other two.

This definition results in the concept of start-up often being used in a digital economy context but it also applies to other high-growth and high-tech intensive industries, such as the life sciences, advanced mechanics and fintech. All start-ups are considered SMEs, but increasingly industrial and entrepreneurship policies are taking account of the specific needs of start-ups and making sure that they are better integrated into policy and regulatory design processes.

Different categories of start-up can be identified. For instance, university **spin-offs** constitute a particular group of start-ups that have their roots in academic entrepreneurship and have the following characteristics: i) they are founded by faculty members or university researchers and graduates, ii) the companies they establish are legally separate from the university, aim at profit generation through commercialisation of technology, and iii) they exploit knowledge and technology developed from academic research<sup>16</sup>. Fast-growing young start-ups are often described as **gazelles**.<sup>17</sup>

<sup>11</sup> European Cluster Observatory, 2016. *Clusters and Entrepreneurship in Emerging Industries*, discussion paper.

<sup>12</sup> Schumpeter J A, 1934. *The Theory of Economic Development*. Harvard University Press, Cambridge, MA.

<sup>13</sup> OECD, 2017. *Business Dynamics and Productivity*. OECD Publishing, Paris.

<sup>14</sup> Maskel P., 2001. *Towards a Knowledge-Based Theory of the Geographical Cluster*.

<sup>15</sup> European Startup Monitor (ESM), <http://europeanstartupmonitor.com>

<sup>16</sup> Pattnaik, P. N., & Pandey, S. C. 2014. University Spin-offs: *What, Why, and How?* Technology Innovation Management Review, 4(12): 44-50.

<sup>17</sup> The Eurostat-OECD Manual on Business Demography Statistics defines gazelles as a subset of high-growth enterprises which are up to five years old and display average annualise growth greater than 20% per annum, over a three year period. For its cluster mapping analysis, the European Cluster Observatory's European Cluster Panorama 2016 followed a more inclusive definition of gazelles as companies less than 5 years old that have grown their employment by at least 10% annually over a

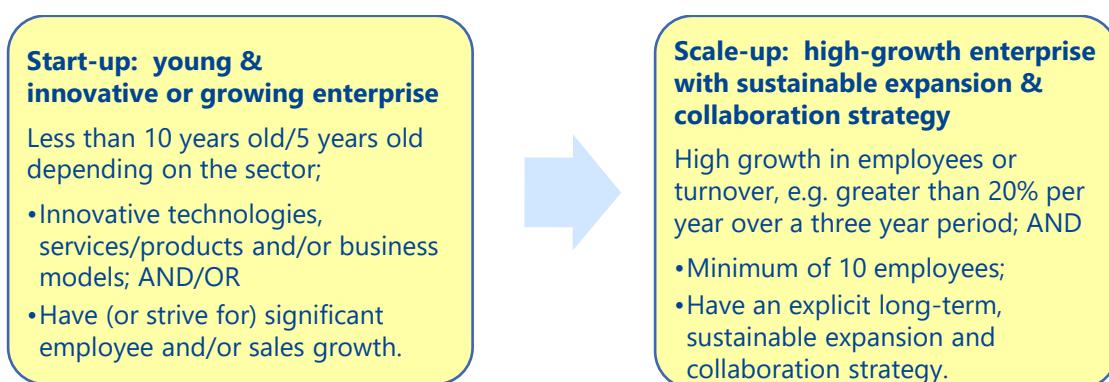
**Scale-ups** are a particular sub-group of companies that exhibit high-growth dynamism, but that are not restricted to start-ups with an ambition to grow fast. While there is no formal, commonly agreed definition of a scale-up, the efforts made to capture scale-ups so far<sup>18</sup> tend to apply (variants of) the following definition of *high-growth enterprises* in statistical measurement: enterprises that increase the number of employees or turnover by more than 20% per year, over a three year period.<sup>19</sup>

This Eurostat-OECD definition for high-growth enterprises also comes with the recommendation to apply a meaningful size threshold for employment or turnover in order

to avoid that the growth of very small enterprises distorts the overall picture.<sup>20</sup> Such a size threshold has been provisionally set by Eurostat & OECD at a minimum of 10 employees at the beginning of the period<sup>21</sup>.

To be considered as a scale-up, an enterprise should also have developed an explicit long-term, sustainable expansion strategy, including strategic collaboration with other established firms and innovation actors.<sup>22</sup> This more qualitative aspect is however more difficult to capture through statistical measurement. Figure 1 provides an overview of the differences between a start-up and a scale-up.

Figure 1 - Start-up and Scale-up criteria



*Source:* Authors

Scale-ups play an important role in boosting national and regional entrepreneurial ecosystems. Scale-ups are highly productive enterprises driving innovation and

competitiveness, as they are more likely to introduce new or improved products, services and business models. They foster employment by creating high-quality jobs and boosting the

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period of three years in order to capture a larger share of the dynamism in regional clusters.

<sup>18</sup> For instance, the 2019 European Panorama of Clusters and Industrial Change by the European Observatory for Clusters and Industrial Change follows the Eurostat-OECD definition of high-growth enterprises to cover SME performance as part of looking at the dynamic growth dimension of clusters.

<sup>19</sup> Eurostat-OECD *Manual on Business Demography Statistics*, 2007

<sup>20</sup> Small absolute increases represent high growth rates as the starting figure for employees or turnover in very small firms is low.

<sup>21</sup> Currently, a pilot is also carried out by ESTAT to explore how micro high-growth firms (with less than 10 employees) could also be captured meaningfully.

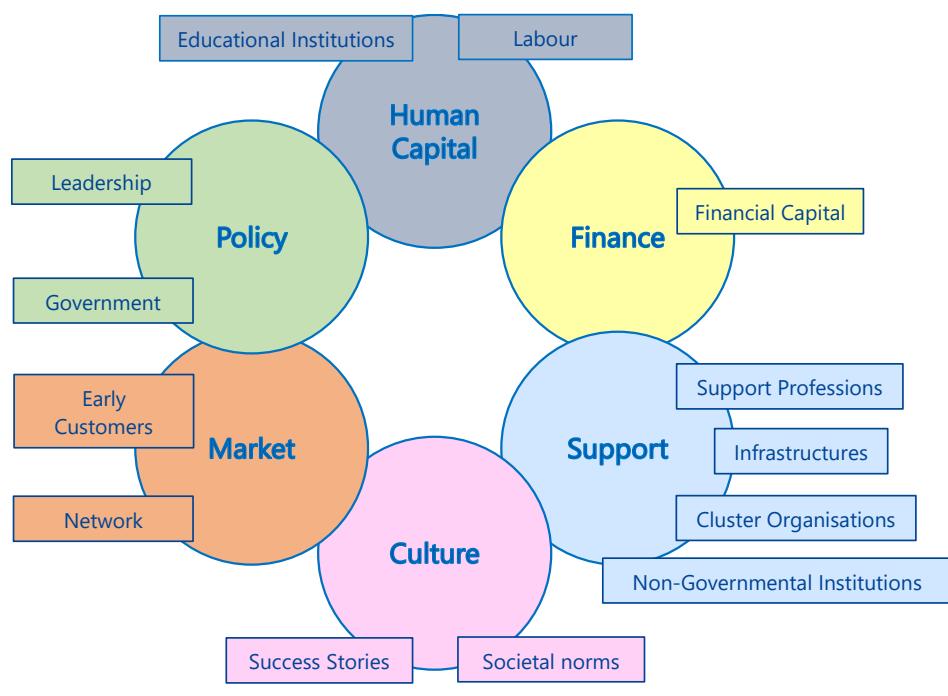
<sup>22</sup> This aspect can, for instance, be found captured by the definition of scale-ups by the Startup Europe Partnership (SEP) that defines a scale-up as "a development-stage business, specific to high-technology markets, that is looking to grow in terms of market access, revenues, and number of employees, adding value by identifying and realizing win-win opportunities for collaboration with established companies." See <https://startupeuropepartnership.eu/scaleups-when-does-a-startup-turn-into-a-scaleup>

creation of modern and more flexible working environments. This leads to economic growth and increased prosperity<sup>23</sup>. Contrary to conventional wisdom, scale-ups operate in a broad range of sectors. They are generally highly digitalised – independent of the sector in which they operate – and are able to seize the opportunities offered by the convergence of digital technologies with other emerging technologies or by the possibility of optimising and upgrading existing products, services and business models by adding value to customers through digitalisation and service innovation.

The **entrepreneurial ecosystem approach** or cluster approach to boosting entrepreneurship promotes a holistic and multi-pronged

view of entrepreneurship that requires the development of long-term support programmes that coherently address businesses' entire life cycle. This approach is grounded in the emerging entrepreneurial ecosystem approach (Figure 2), where framework conditions (e.g. access to assets, infrastructure, talents, markets) and systemic conditions (networks, leadership, finance, knowledge, intermediary organisations) are key elements in determining the success of new businesses in achieving sustainability and prosperity<sup>24</sup>. This approach tries to overcome the lack of integration of the entrepreneurship dimension in innovation and regional development policies and programmes.

*Figure 2 - Key elements of the entrepreneurial ecosystem*



*Source: Daniel Isenberg, 2010*

Clusters and cluster organisations are an important part of the entrepreneurial ecosystem. The entrepreneurial ecosystem

concept provides the theoretical framework and rationale for developing cluster policies that create a favourable environment for high-

<sup>23</sup> Communication from the European Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 2016. *Europe's next leaders: the Start-up and Scale-up Initiative*; COM/2016/0733 final

<sup>24</sup> Isenberg D. J., 2010. *How to start an Entrepreneurial Revolution*, Harvard Business Review, Harvard Business School Publishing Corporation.

growth start-ups and ambitious entrepreneurs. In this view, the attributes of a successful entrepreneurial ecosystem include the presence of a strong group of leading entrepreneurs and universities, the availability of intermediary organisations (e.g. cluster organisations, university incubators) and services, the presence of large anchor firms, supportive public policies and, finally, the establishment of communities of start-ups and entrepreneurs<sup>25</sup>.

From a policy perspective, it is challenging to implement such an approach. As compared to past approaches to market and systemic failure, which have typically been top-down, the entrepreneurial ecosystem approach builds upon local actors and their dynamic interactions. Stand-alone and fragmented actions that reinforce only one dimension of the ecosystem are considered ineffective in promoting entrepreneurship sustainably. In this view, support to entrepreneurship needs to be context-specific and designed based on local conditions, rather than attempting to replicate successful entrepreneurial models.

While "strengthening the strength" is often (wrongly) cited as the underlying principle of traditional cluster policies because of their focus on specific related industries, a modern cluster policy approach to entrepreneurship aims to address the weaknesses or bottlenecks that hold back the performance of the wider regional entrepreneurial ecosystem.

An important element in such an approach is the relevance of networks and of the adoption of participatory approaches that engage with

both the private sector and educational institutions.

**High-growth entrepreneurship** has been increasingly considered by national and regional policies as an objective because of the increasing realisation that not all start-ups contribute equally to economic growth. High-growth oriented policies are focused on supporting entrepreneurs with the largest economic potential, while most traditional enterprise policies aim to increase the number of entrepreneurs and new enterprises. High-growth oriented policies focus on developing favourable innovation ecosystems and clusters of related industries as well as on fostering connections between them. This focus reflects the fact that innovation is transversal to many sectors and industries<sup>26</sup>, while traditional enterprise and innovation policies have a strong focus on supporting research and development (R&D) and the protection of intellectual property rights<sup>2728</sup>.

Improving the efficiency of the ecosystem for start-ups and scale-ups is critical for Europe's competitiveness at a global level. Thus, in recent years, the EU and many Member States have established a significant number of initiatives and programmes targeting high-growth entrepreneurship. The start-up and scale-up manifestos<sup>29</sup> are noteworthy examples of the joint mobilisation of European entrepreneurs and other stakeholders willing to create and interlink entrepreneurial ecosystems, where start-ups and scale-ups can grow and create jobs.

<sup>25</sup> Stam, E., Spigel, B. 2016. *Entrepreneurial Ecosystems*. Utrecht School of Economics. Tjalling C. Koopmans Research Institute. Discussion Paper Series 16-13.

<sup>26</sup> The transversal nature applies to both: the transformative impact and the creation process of innovation. In other words, innovation diffuses and occurs when different technologies, service offerings, sectors and value chains meet.

<sup>27</sup> Organisation for Economic Cooperation and Development (OECD), 2014. *Entrepreneurial Ecosystems and Growth Oriented Entrepreneurship*. [www.oecd.org/cfe/leed/Entrepreneurial-ecosystems.pdf](http://www.oecd.org/cfe/leed/Entrepreneurial-ecosystems.pdf)

<sup>28</sup> Traditional enterprise and innovation policies often follow a simplified, linear view of the innovation process as the mere commercialisation of R&D results.

<sup>29</sup> <http://scaleeuropemanifesto.eu/>

## 2.2 Overview of the mapping of Europe's start-up and scale-up ecosystems

*StartUp Europe*<sup>30</sup> is an initiative supported by the European Commission that has mapped numerous start-up ecosystems in Europe. It aims to increase start-ups' visibility, identify funding sources (investors, public organisations, corporates) and point to existing or new support services (accelerators, co-working, universities, incubators, influencers) for start-ups. The mapping tool also offers useful information for ecosystem builders who would like to connect better with other start-up initiatives across Europe. In January 2019, the mapping tool included as many as 178 accelerators and 138 incubators across Europe and the COSME Associated countries. This high number of national-level initiatives highlights the importance attached to supporting start-up creation and establishing sound foundations for their growth.

The *Startup Hub*<sup>31</sup>, another initiative launched by the European Commission within the framework of the Start-up and Scale-up Initiative<sup>32</sup>, has developed a dynamic mapping of 20 start-up ecosystems focusing on tech-start-ups. Although the mapping is not exhaustive, it shows the increasing size and dynamism of European start-up ecosystems and of their capacity to raise investment and create new jobs and drive innovation and entrepreneurship. The *Startup Hub* also provides a number of **lessons learnt** from mapping these ecosystems, including in relation to the areas where public support should focus. These include:

- removing regulatory and tax burdens;
- creating incentives either to the business or to the investor community;
- providing funding and support programmes; and
- improving the visibility of successful individual start-ups or of start-up ecosystems as a whole.

It also points to some critical **challenges** holding back the growth of European start-ups:

- access to talent, both technical/high-level skills and entrepreneurial talent;
- access to finance beyond seed and early-stage funding to support scaling across Europe and globally;
- concentration of the most competitive ecosystems in a few European cities (e.g. London, Berlin and Paris) and the existence of large disparities among Member States in their ability to be innovative;
- prevailing attitudes, with a preference towards becoming an employee in an established business or organisation, rather than creating (with others or alone) an own start-up and thus being self-employed.

A report by ThinkYoung<sup>33</sup> also highlights the progress made in building the European start-up ecosystems that are gradually emerging in very different locations thanks to the availability of successful national and European support policies. Nevertheless, the report points to the need to complete, strengthen and extend the EU Single Market to create more favourable conditions for start-ups to scale across Europe. It raises concerns about the fact that there are still too many

<sup>30</sup> <http://startupeuropemap.eu/map/>

<sup>31</sup> <http://www.startuphubs.eu/>

<sup>32</sup> COM/2016/0733 final, op.cit.

<sup>33</sup> ThinkYoung, 2018. *Transforming European start-ups into global leaders. A view from young European entrepreneurs.*

regulatory barriers for firms wanting to access different European markets (e.g. restrictions on data location and on the free-flow of data, uncertainty about data ownership and data access), and suggests that the creation of a truly single market will establish conditions for enterprise growth within Europe that are similar to larger markets such as the US and China.

These mapping tools are complemented by the cluster mapping tool of the *European Cluster Collaboration Platform*<sup>34</sup> that maps over 1,000 specialised SME intermediaries (i.e. cluster organisations). The platform also envisages extending its mapping by asking registered cluster organisations also to map their related scaling-up support organisations (including technology centres<sup>35</sup>, research institutes, fab labs<sup>36</sup>, (digital) innovation hubs<sup>37</sup>, creative hubs, resource-efficiency service providers<sup>38</sup>, incubators and accelerators).

## 2.3 How can clusters boost entrepreneurship?

The existence of favourable framework conditions can accelerate the creation of new enterprises and boost SME competitiveness.

The Regional Ecosystem Scoreboard prepared by the European Cluster Observatory<sup>39</sup> identified the quality of conditions in the regional ecosystem that can foster or hinder entrepreneurship revealing both enabling and constraining mechanisms. These are grouped in three macro-categories: i) regulatory framework for starting a business, ii) entrepreneurial culture, and iii) attractiveness of the region and quality of infrastructure. Within this framework, the availability of support services to enterprises through cluster organisations forms part of the enabling conditions of regions' business support infrastructure. In addition, clusters also contribute to improving the overall quality conditions of regional business ecosystems by fostering the creation of dynamic cross-sectoral collaboration spaces for innovation and entrepreneurship. In particular, clusters often have the following **attributes** that form the building blocks of regions' competitiveness and resilience:

- the availability of knowledge linkages and partnerships both internal (within the cluster) and external (with other clusters);
- the presence of dynamic innovation ecosystems based on the interaction

<sup>34</sup> [www.clustercollaboration.eu](http://www.clustercollaboration.eu)

<sup>35</sup> Numerous terms are used for "technology centres", such as innovation centres, science parks, technology parks, fab labs, co-working centres and so on. See also European Commission (2014) *Setting up, managing and evaluation EU Science and Technology Parks: An advice and guidance report on good practice* [https://ec.europa.eu/regional\\_policy/sources/docgener/studies/pdf/stp\\_report\\_en.pdf](https://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/stp_report_en.pdf). The European Commission has defined and mapped technology centres that provide services to SMEs to innovate with Key Enabling Technologies (KETs) as being any public or private organisation capable of delivering research and innovation close-to-market services to SMEs from Technological Readiness Level (TRL) 3 to 8, but with at least one TRL >5. See <https://ec.europa.eu/growth/tools-databases/kets-tools/kets-tc/map>. For an explanation of TRLs, see <https://ec.europa.eu/research/participants/data/ref/h20>

[20/wp/2014\\_2015/annexes/h2020-wp1415-annex-g-trl\\_en.pdf](20/wp/2014_2015/annexes/h2020-wp1415-annex-g-trl_en.pdf)

<sup>36</sup> Fab labs are the short term for digital "fabrication laboratories" that, for instance, provide manufacturing equipment (such as 3D printers) that allow for flexible and customised, rapid prototyping.

<sup>37</sup> Digital Innovation Hubs act as one-stop-shops where companies – especially SMEs, start-ups and mid-caps – can get access to technology testing, financing advice, market intelligence and networking opportunities in relation to digital transformation and uptake of digital technologies. See also <https://ec.europa.eu/digital-singlemarket/en/digital-innovation-hubs> and <http://s3platform.jrc.ec.europa.eu/digital-innovation-hubs-tool>

<sup>38</sup> <https://www.resourceefficient.eu/en/support-organisations>

<sup>39</sup> European Cluster Observatory, 2016. *Regional Ecosystem Scoreboard Methodology Report*.

- between competition, cooperation and knowledge-sharing behaviours;
- the presence of a strong entrepreneurial culture;
- the availability of specialised high-quality inputs, including talent and infrastructure for business;
- the abundance of social capital; and
- the existence of favourable demand conditions due to the proximity of suppliers, consumers and end-users.

Clusters constitute a natural part of regional business ecosystems, and there is a substantial body of evidence showing the connection between clusters and entrepreneurship (Figure 3). Clusters have a positive impact on the level of innovation, the growth and the survival rate of start-ups. Strong clusters are generally associated with the formation of new firms and higher start-ups survival<sup>40</sup>.

The 2016 European Cluster Panorama<sup>41</sup> has shown that 25 000 or 38% of the young, fast-growing start-ups – the so-called gazelles – are located in strong clusters. It also shows that the gazelles in strong clusters are substantially larger: they employ 35 employees on average, compared to 24 for those outside strong clusters.

Clusters provide fertile ground for accelerating entrepreneurship because a successful cluster model is often based on close interactions between firms, research and training institutions<sup>42</sup>. At the same time, cluster

development is influenced by the regional business environment. Clusters can thrive where the business environment is open to innovation, and the entrepreneurial culture is strong, but can also fail to adapt to changes because of the lack of entrepreneurial dynamics or the lack of pro-active policies. Clusters evolve along with the regional ecosystem. Clusters that perform well are not rigid structures but remain open to new cross-sectoral business combinations and constantly evolve and renew themselves.

Most of these cross-fertilisation effects occur naturally, but public intervention can also play an important role in strengthening the education sector, addressing a decline in the number of technicians and researchers, and in promoting initiatives that aim to make the process of enterprise creation more inclusive (e.g. by fostering the participation of women, immigrants and retirees). Within clusters, strong universities and research centres are instrumental in establishing a critical mass of human capital, which, combined with a business-friendly environment and a favourable mind-set towards entrepreneurship, lay the foundation for cluster development, growth and adaptation to market changes. Clusters facilitate the sharing of experience, including from successful role models and corporates, and can connect entrepreneurs to multiple innovation ecosystems.

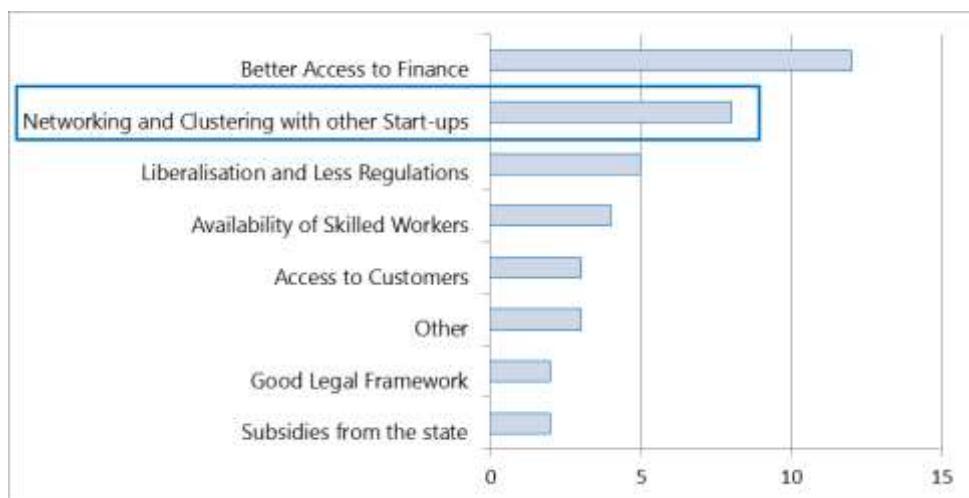
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<sup>40</sup> Mercedes Delgado, Michael E. Porter, Scott Stern, 2010. *Clusters and entrepreneurship* in Journal of Economic Geography.

<sup>41</sup> European Cluster Observatory, 2016. *European Cluster Panorama 2016*

<sup>42</sup> OECD, 2010. *Policy issues in clusters, innovation and entrepreneurship*.

*Figure 3 - Key elements an ecosystem should provide to make start-ups successful*



Source: ThinkYoung, 2018. *Transforming European start-ups into global leaders. A view from young European entrepreneurs.*

There is evidence to indicate that cluster policies and initiatives can be effective instruments for organising and delivering entrepreneurship policies due to their bottom-up dynamics. Cluster-level actions cover a broad scope due to their capacity to reach a larger number of companies in related industries and to address more effectively the obstacles that might arise along the value-chains<sup>43</sup>. Contrary to traditional industrial policies, modern cluster policies aim to favour business communities within clusters that foster innovation and entrepreneurship. This facilitates the development of new industrial value chains, the consolidation of emerging industries and the emergence of start-up champions.

The development of a high-growth oriented entrepreneurship environment has shifted the focus away from the enterprise to the entire ecosystem, including the linkages across the different actors in the value chains (Figure 4). This shift has further strengthened the linkages

between cluster and entrepreneurship policies. Clusters' growth-oriented policies emphasise enterprises' external environments instead of their internal characteristics and operations, leading to a more holistic approach<sup>44</sup>. The high-growth oriented cluster policy framework aims to foster the development of a favourable business ecosystem for innovation and entrepreneurship in which start-ups with the largest economic potential can emerge.

These policies can consist of supporting networking activities and setting up cluster organisations that provide support services to an entire ecosystem of start-ups and scale-ups. They are delivered through instruments that simultaneously and coherently address different dimensions of the entrepreneurial ecosystem, including a talented pool of workers, strong networks, role models and availability of advice, mentoring, learning from peers and other resources to support entrepreneurial activity within the cluster.

<sup>43</sup> European Commission, 2016. *Smart Guide to Cluster Policy.*

<sup>44</sup> Organisation for Economic Cooperation and Development (OECD), 2014. *Entrepreneurial Ecosystems and Growth Oriented Entrepreneurship.*

*Figure 4 - Transition towards high-growth oriented enterprise policies highlights the key role of clusters*



*Source:* Adapted from Organisation for Economic Cooperation and Development (OECD), 2014. *Entrepreneurial Ecosystems and Growth Oriented Entrepreneurship*.

# 3 How to promote entrepreneurship through clusters

This chapter illustrates how clusters can support the different phases of the entrepreneurial life cycle through an ecosystem approach that integrates would-be entrepreneurs, start-ups and scale-ups within existing networks. It describes the advantages and the challenges of delivering entrepreneurship support services within clusters. It provides examples of specific initiatives.

## 3.1 The role of clusters

Clusters play a key role in fostering entrepreneurship. Within clusters, the provision of support services for entrepreneurship is often the result of partnerships between different entities, such as cluster organisations, universities, industry or SME associations, technical schools and public agencies.

Over the past decade, European universities have been increasingly seen as a source for the creation of high-technology firms. They have become more aware of the need to disseminate the knowledge generated within universities and of the economic and social benefits generated by the transfer and commercialisation of academic knowledge.

Specialised SME intermediaries, such as cluster organisations, also play a key role in promoting entrepreneurship. Table 1 provides an overview of the services regularly provided by cluster organisations to promote entrepreneurship<sup>45</sup>. Most of the services included in the table below are not provided to support the creation of new business ventures but are delivered as part of the package of services that cluster organisations offer to their members.

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<sup>45</sup> European Cluster Observatory, 2016. Clusters and Entrepreneurship in Emerging Industries.

*Table 1 - How cluster organisations support entrepreneurship*

DIMENSION	FACTORS DETERMINING ENTREPRENEURSHIP	INSTRUMENTS
Market conditions	<ul style="list-style-type: none"> <li>• Access to the domestic market</li> <li>• Access to foreign markets</li> </ul>	Distribution of information, networking, matchmaking, legal advisory services for export-related activities, international cluster partnerships
Access to finance	<ul style="list-style-type: none"> <li>• Access to public funding</li> <li>• Networking with private investors</li> <li>• Promoting the participation of financial institutions and venture capitalists</li> </ul>	Distribution of information, networking and facilitation of contacts with investors, support and advice with submission of project proposals for public grants or loans
Knowledge creation and dissemination	<ul style="list-style-type: none"> <li>• R&amp;D investment</li> <li>• University/industry interface</li> <li>• Technological cooperation between firms and other institutions, such as research centres</li> <li>• Technology dissemination</li> </ul>	Project development, facilitation of contacts, matchmaking, support with the acquisition of public funding for innovation
Entrepreneurial capabilities	<ul style="list-style-type: none"> <li>• Business and entrepreneurship education</li> <li>• Training and experience of entrepreneurs</li> <li>• Entrepreneurship infrastructure</li> </ul>	Training and seminars, co/development of curricula and study courses with academic and vocational training institutions, incubators

*Source:* Author's adaptation from European Cluster Observatory, 2016. *Clusters and entrepreneurship in emerging industries. Discussion paper*

In addition to the services listed above, a broader variety of entrepreneurship support measures can be delivered within clusters. Overall, these can be grouped in three broad categories of services that correspond to the **different needs along the entrepreneurial life cycle** (see Figure 5):

- early-stage entrepreneurship (i.e. stand-up phase),
- start-up phase (micro enterprises<sup>46</sup>), and
- scale-up and growth phase (micro enterprises and SMEs).

In parallel with providing specific services to would-be entrepreneurs, start-ups, scale-ups and SMEs, clusters can also support entrepreneurship by addressing the lack of demand for emerging industries. In these cases, the support does not target specific groups of individuals or companies, but it rather benefits the entire cluster by stimulating demand for specific technologies (e.g. green solutions, digitalisation) and developing new markets, supply chains and value chains.

<sup>46</sup> According to Eurostat micro enterprises have fewer than 10 persons employed. Small and medium-sized enterprises have between 10 and 249 persons employed.

*Figure 5 - How clusters can support entrepreneurship*



*Source: Authors*

### **3.2 Boosting early-stage entrepreneurship**

Europe boasts a wealth of talent and world-class researchers, but this excellence does not translate sufficiently into entrepreneurial success stories. Programmes focusing on early-stage entrepreneurship aim to nurture entrepreneurial mind-sets and entrepreneurial skills with young people and students in secondary schools or universities. The activities promoted by these programmes have as their objective changing attitudes and inspiring the recognition of career development or business opportunities within specific industries or technologies. They also aim to raise awareness about the skills that are needed for smart industrial specialisation and digital transformation to underpin industrial modernisation and workforce transformation. To achieve these objectives, measures promoting early-stage entrepreneurship include services that support the development

of basic entrepreneurial competencies (e.g. leadership, creativity, teamworking) and business-specific skills (e.g. legal and financial issues, accountancy, marketing, human resource management), promote entrepreneurship branding, and design new curricula and skills development roadmaps.

Universities can be particular assets to boost entrepreneurship, especially if well anchored in the regional ecosystem. They are often targeted by entrepreneurship support programmes for curricula development and to attract potential (postgraduate) entrepreneurs. Students themselves (who have not yet graduated) are sometimes overlooked both as a target group as potential future entrepreneurs or as future intrapreneurs (as employees of cluster firms).

A good practice example of how this can be achieved – as described by a report of the

European Creative Industries Alliance<sup>47</sup> – is the Demola innovation challenge platform.<sup>48</sup> The platform allows local businesses to reach out to students to encourage the development of solutions to their real life challenges while the student projects are part of the curricula and IPR arrangements are made in advance.<sup>49</sup> Such an approach could also be adapted to a more cluster focus. This would imply that such a platform would follow more a specific thematic, industry-specific or challenge-based focus and involve the related cluster organisations in reaching out to groups of specialised firms to pose their challenges. Alternatively, the approach could also be implemented by cluster organisations if the necessary capacities and linkages exist.



### **Advantages of supporting would-be entrepreneurs through clusters**

- Clusters offer an ideal environment for the joint design and implementation of new curricula and skills development programmes because both the interests of corporates and SMEs are represented.
- Clusters follow and anticipate the latest technology trends and are in a privileged position for identifying the skills of the future.
- The formal education system, including universities and vocational schools, is often a member of the cluster. These entities are the best vehicle for channelling programmes targeting early entrepreneurship development because they can reach out to a large number of young people.

- Clusters attract highly talented individuals who are more likely to become entrepreneurs.
- Within clusters, support to early-stage entrepreneurship can be linked and targeted on specific industries, value chains or related industries.
- Cluster organisations can be used to connect students with regional businesses (e.g. for finding solutions to their problems).
- Clusters facilitate the development of European networks of universities and technical schools within emerging industries (e.g. circular and green economy). This helps establish stronger European curricula.
- Clusters facilitate the development of fellowship and apprenticeship programmes to carry out projects within the enterprises in the cluster network.
- Support to early-stage entrepreneurship through clusters can be delivered by promoting entrepreneurship branding and by contributing to the development of new curricula and skills development plans.



### **Entrepreneurial culture and awareness-raising**

These initiatives aim to promote careers paths and entrepreneurship within STEM (Science, Technology, Engineering and Mathematics) disciplines while raising awareness about the importance of developing high-tech T-shaped skills<sup>50</sup>. These objectives are pursued through the organisation of information events where successful entrepreneurs can be invited to provide testimony on what it takes to become

<sup>47</sup> European Creative Industries Alliance, 2014. *Create. Innovate. Grow.* Report available at <http://www.eciaplatform.eu/wp-content/uploads/2014/11/ECIA-report-Create-Innovate-Grow-1.pdf>

<sup>48</sup> <https://www.demola.net/>

<sup>49</sup> The Demola platform envisages that solutions can be commercially utilised by the student team that

developed them and/or the company which posed the innovation challenge. The projects are part of the students' curriculum (with credits allocated) and the students also get IPR ownership, while the companies get the licensing right and pay the students a fee based on how pleased they are with the results.

<sup>50</sup> Deep knowledge and skills in a single domain coupled with the ability to collaborate across multiple disciplines.

an entrepreneur. Another way to raise awareness about entrepreneurship consists of organising entrepreneurial competitions, which can take place both in secondary schools and universities, where students are

challenged to provide solutions for real business cases.

### ***Examples of initiatives for raising entrepreneurial culture & awareness***

ENTREPRENEURIAL CULTURE	EARLY CAREER AWARENESS IN ICT
<p><i>EXIST Culture of Entrepreneurship</i> (Germany) supports universities in formulating and implementing a comprehensive and sustained university-wide strategy for increasing entrepreneurial culture and spirit. Since 1998, the programme has provided funding to universities on a competitive basis to set up creative spaces for ideas and experience exchanges, innovation cafés and workshops, training and engaging coaches and lectures in entrepreneurship.</p>	<p><i>EuraTech'Kids</i> (France): Coding, robotics and creativity. Every year EuraTechnologies organises workshops for children of different age groups to develop curiosity and creativity by coding web pages, robot programming (Lego Wedo 2.0) and robot building.<sup>51</sup> The children are also introduced to the different types of activities that exist in the digital sector.</p>

See good practice factsheet A6 in Annex A.

See good practice factsheet A3 in Annex A.



#### **Curricula**

#### **development**

Partnerships with universities and technical schools are key for the development of the workforce of the future and for the alignment of curricula in training programmes with the skills in demand from businesses. This is all the more the case in that advances in technology and automation have raised the bar significantly on the entry-level skills required across most industries.

These partnerships can be geared towards promoting an entrepreneurial education within the main curriculum or as an extra-curricular activity. But more importantly, they can bring about new curricula and supply local clusters with a pool of talented researchers and entrepreneurs. The development and delivery of high-quality curricula combining academic and work-life training within dynamic clusters is also a strong lever for attracting talent from other regions.

<sup>51</sup> See also The New York Times, *Taking the Future of Manufacturing into High Schools*, 7 June 2019. Available at:

<https://www.nytimes.com/2019/06/07/education/learning/high-school-manufacturing-robotics.html>

<b>Examples of the co-development of curricula</b>	
CURRICULA DEVELOPMENT	MATCHING LABOUR DEMAND & SUPPLY
<p>The University of Évry Val-d'Essonne (France) is one of the founding members of <i>Genopole</i>, a Paris-based biotech cluster. The two institutions have collaborated to design and implement a complete cycle of training in biology, including teaching in genomics, bioinformatics or mathematics applied to biology. In addition, the Institute of trades and technologies (L'Institut des Métiers et des Technologies), which provides specialised training to technicians in pharmaceutical production, has opened a centre within Genopole. The combination of these two initiatives is strategic to ensuring the development of the biomanufacturing sector of tomorrow.</p> <p>See good practice factsheet A7 in Annex A.</p>	<p>As a result of an ageing workforce and a declining working-age population, the Milwaukee (US) metropolitan area anticipates that the number of unfilled jobs will rise to 105 000 by 2027. The cluster programme tackles skills mismatch through two initiatives. On the one hand, it addresses the region's businesses' immediate need for talent by facilitating the matching of labour supply and demand. On the other, it facilitates career-based learning experiences with local businesses through the "Grow Here" campaign. This is based on facilitating partnerships and interactions, including through an online platform, among industry, students and teachers.</p> <p>See good practice factsheet A11 in Annex A.</p>



### Tips and tricks for boosting early-stage entrepreneurship

- Establish partnerships with vocational schools and universities to regularly revise and update curricula.
- Gather information from industry, including SMEs and start-ups (through industry associations and cluster organisations), to inform curricula and new programmes.
- Promote tailored events that showcase the skills of the future to children and young people.
- Provide information on sector and market needs to support early start-

ups in their positioning on the market and on IPR related issues to protect their intellectual property and innovative products.

- Involve entrepreneurs within the cluster to act as testimonials and role models to attract talents.
- Work with other clusters to develop international curricula and opportunities for fellowships and apprenticeships.
- Establish partnerships between universities and clusters to unlock the entrepreneurial potential of students.

### 3.3 Fostering start-ups

As newly established companies, start-ups are still determining their product market fit and are experimenting with users and customers to identify their most suitable business model. Programmes targeting start-ups usually aim to help would-be entrepreneurs or newly established companies to develop and validate a product or service, to move to the

next steps and get access to investors. Services provided in this phase aim to support market validation, develop a sound "proof of concept", perfect a pitch to investors, combine managerial and technical skills and develop the networks of the future entrepreneurs. At the end of this phase, it should be clear if the proposed business project can work in a real market environment and if the proposed business model is realistically scalable.



## Advantages of supporting start-ups through clusters

- Access to open innovation ecosystems.
- Networking with and attracting industrial communities along the value chain, including potential private or public sector customers, suppliers, research infrastructure and leading enterprises within specific industries.
- Access to public programmes supporting R&I projects, matching with other partners or internationalisation within specific industries.
- Access to knowledge on the latest technology developments and technology trends.
- Access to large buyers and potential partners within the cluster. This can accelerate the testing and introduction of innovative technologies into markets.

Support for start-ups through clusters is mostly delivered through publicly funded business accelerator programmes which can be hosted within university incubators or technology parks. These initiatives aim to foster entrepreneurship within a given industrial or technological area, to establish a community of start-ups and to connect the newly established companies with the actors of the regional innovation ecosystem (e.g. enterprises, investors, public agencies delivering services for start-ups, research facilities). Access to these programmes is generally free, but it is organised on a competitive basis, especially in business acceleration programmes.

There would also be scope to use such programmes to attract start-ups from elsewhere (e.g. through specialised business or growth plan competitions). This could in particular target those start-ups that specialise in industrial or technological domains relevant

to the strength of the regional ecosystem. These might be encouraged to relocate to the regional clusters, especially if they do not have a favourable and specialised business environment in their current location.

However, when start-up support programmes are financed by local or regional funds, including the European Regional Development Fund (ERDF), some restrictions might apply to the eligibility conditions of participants. Participants might have to reside in a specific region or have their newly established company registered in the region. Applying such restrictions hinders the potential for reaching out effectively to start-ups.

Programmes supporting start-ups can be divided into the following two broad categories.

**Programmes that focus on the pre-start phase** by addressing two target groups: research-based start-ups and spin-offs hosted within university incubators or science parks, and innovative would-be entrepreneurs (without an intense R&D focus). The former group is made up of university researchers or of university graduates working on complex research projects that develop new technologies but often without having the necessary entrepreneurial skills to take their innovation to market.

The first target group has yet to develop a proper business or commercial plan for its project idea and needs both scientific and business support services. Incubation periods are generally long, between one and three years. During this time the start-up focuses on technology development and the acquisition of some basic entrepreneurial skills.

The latter group is made up of innovative entrepreneurs whose projects do not need long incubation periods because they are not R&D intensive. In this case, pre-accelerator

programmes focus on building entrepreneurship mind-sets and on providing teams and start-ups with technical and entrepreneurial competences and skills.

### ***Examples of programmes for researchers and university graduates***

#### **GENOPOLE SHAKER**

The University of Évry Val-d'Essonne (France) is one of the founding members of *Genopole Shaker*, which targets PhD students, postdocs and engineers, to support proof-of-concept experimentation. It offers six months access (extendable for another six months) to a fully equipped biotech laboratory, associated facilities and expert support to test the feasibility of a biotech project. It also includes a seven-day entrepreneurship training programme. Up to five participants are selected every six months by independent experts according to the degree of innovation of the project and the will to integrate in the Genopole campus.

See good practice factsheet A7 in Annex A.

#### **AplusB INCUBATOR NETWORK**

The Austrian incubator network AplusB (Academia plus Business) supports a high-tech incubator in Graz which is hosted within the Graz Science Park. The incubator provides university graduates with professional counselling and coaching, infrastructure and financing (up to EUR 20 000 in interest-free loans) during the pre-start-up phase (up to 2 years). The incubator's mentoring programme combines the scientific and technical expertise of the regional universities with advice from successful entrepreneurs. Idea competitions are also organised to provide access to additional funding.

See good practice factsheet A5 in Annex A.

**Programmes that focus on start-up acceleration** target start-ups that have already developed a business idea and a preliminary business plan, but that are not ready to grow sustainably because they still need to establish more solid foundations for their business model, do not yet have a network of suppliers and customers, and are not fully aware of relevant regulations and on how to comply with them. These programmes usually have a short duration given that they target entrepreneurs with specific needs.

Participants can also be hosted within an incubator where they receive intensive individual coaching, are regularly assessed for their progress, and can take part in industry-specific workshops and seminars. The focus of acceleration programmes is on improving the start-up pitch, establishing partnerships with suppliers, customers and other enterprises, gaining access to additional private or public financing and exploring internationalisation as a possible growth path.

<b>Examples of programmes focusing on start-up acceleration</b>	
(without incubation)	(with incubation)
<p>Since 2016, the <i>MedTech Accelerator (Belgium)</i> developed by lifetech.brussels has boosted medical start-ups (less than 3 years old) that have a first lab proof of concept and have already validated their market hypotheses with potential customers or partners. Applications are open annually for about 20 start-ups that are selected competitively to join the programme of 12 full days over 4 months. The programme is developed in partnership with sector mentors and experts, and is made up of different modules: thematic, business, pitch sessions and monthly individual mentoring. An important value added of the programme is that it facilitates participants' access to the Belgian MedTech ecosystem.</p> <p>See good practice factsheet A9 in Annex A.</p>	<p><i>Start by EuraTechnologies (France)</i> is a business incubation programme that helps entrepreneurs take their ideas from concept to prototype in 80 days. The programme focuses on concepts, design, testing, the minimum viable product, pilot trials and pitch training. Once the programme is completed the best performing start-up can continue the incubation process within an <i>EuraTechnologies</i> incubator. These structures form a full-blown digital ecosystem for creativity and innovation that bring under one roof start-ups, SMEs and corporates, technology transfer organisations, research centres and public agencies providing services and financing for start-ups and SMEs. The organisers believe that start-ups greatly benefit from this concentration of entrepreneurs, talent, skills and resources.</p> <p>See good practice factsheet A3 in Annex A.</p>

The most critical services for both groups of start-ups are access to seed finance, facility provision, mentoring and role models, as discussed below.



#### **Access to seed finance.**

One of the most significant challenges faced by start-ups is the ability to finance their product or service from inception through to maturity. The seed stage is generally financed through the start-up founders' personal/family savings, grants, subsidised loans or start-up prizes. Some start-up programmes include access to finance as part of their services. This is often the case of university incubators that focus more on university spin-offs and early-start-up development. If the programme does not directly provide access to finance, start-ups can usually get assistance in identifying

and applying for regional, national or European programmes<sup>52</sup> that provide seed capital. Another way in which pre-seed or seed finance can be provided is by launching a crowdfunding campaign.

Training and mentoring programmes also help to build the necessary financial literacy skills among start-ups' founders. More developed start-ups, which have a solid proof of concept and have their financial due diligence finalised, are matched with potential investors and venture capitalists. Within clusters, these contacts are facilitated by existing partnerships with financial institutions or by the fact that potential investors may be members of the cluster.

<sup>52</sup> Different EU funding opportunities for SMEs and start-ups can be found at: <http://startupeuropeclub.eu/eu-funds-and-support/>



### **Facilitating access to workspaces and testing environments.**

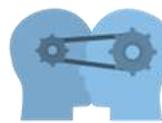
The provision of facilities for start-ups are of two types. For research-based start-ups working on new technologies or radical innovations, the research infrastructure needs to be available to carry out tests in a safe environment. These types of service are generally provided by technology parks and university incubators or in partnership with universities and research centres.

For digital start-ups or for start-ups that work in the service or digital sectors the facilities are usually co-working spaces equipped with relevant services, such as a high-speed internet connection, cloud services, 3D printers and meeting rooms.

These business incubators can help reduce the costs of launching and operating a start-up, but there are also other important benefits in bringing start-ups together within one physical space. This facilitates the exchange of experiences, mutual learning and networking with other entrepreneurs and it increases the visibility of a start-up within the local entrepreneurial community. Start-ups hosted in incubators can also participate in pitching events, workshops or technology days that are organised within these facilities.

The largest and more modern versions of these shared office spaces are developed as

co-living spaces (e.g. *Station F* in Paris<sup>53</sup>) where a number of additional services (restaurants, cafe, relaxation areas) are included to promote the establishment of more cohesive entrepreneurial communities and to foster peer-to-peer support and attract investment.



### **Mentoring and role models.**

Mentoring offers a more personalised training experience that is more tailored to the need of would-be entrepreneurs and start-up founders. Interaction with mentors facilitates a quick and efficient transfer of experience to learning and has substantial inspirational and motivational effects. In its simplest form, mentorship can be interpreted as providing role models for novice entrepreneurs. In more complex programmes, interaction with mentors is more structured. In an intensive acceleration programme, there is regular interaction – from once a month to once every three months – to discuss progress made by the start-up and provide additional advice. Entrepreneurship programmes developed by clusters rely on an extensive network of mentors within specific industries and can include local, national and international mentors.

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<sup>53</sup> Station F is the biggest start-up campus in the world and it is privately financed.

<b>Examples of mentoring support</b>	
(Role model)	(Individual business advice)
The pre-acceleration point in the <i>South Poland Cleantech Cluster</i> works with a group of Scandinavian mentors from Denmark, Finland and Sweden. The selected mentors come from globally successful start-ups, large and global companies and private investors. Besides inspiring potential entrepreneurs, these mentors also work as coaches to Polish mentors.	<i>Scale-up Denmark</i> is an acceleration programme targeting potential high-growth SMEs with intensive training and mentoring delivered by 12 hubs specialised in different industries with smart specialisation strategies. Participants are supported by teams of industry-specific experts, but also by cross-industry teams, which are identified by each hub to match the specific need of each start-up.

See good practice factsheet A8 in Annex A.

See good practice factsheet A1 in Annex A.



### Tips and tricks for fostering start-ups

- Identify role models within the clusters or the regional entrepreneurial ecosystem that can show a path to success that others can follow.
- Employ industry-specific mentors to regularly assess the progress of the start-up company in achieving key performance indicators.
- Support start-ups in developing the proof of concept to focus on users, customers and markets by tapping into cluster resources and avoid focusing only on product development and prototyping.
- Help start-ups access financial resources available through cluster programmes.
- Launch crowdfunding campaigns within the cluster network.
- Connect the start-ups with other well-established companies to facilitate learning from other entrepreneurs.
- Develop incubators and accelerator programmes to nurture communities of innovative entrepreneurs within the same or cross-sectoral industries, along with delivering specific entrepreneurial training and granting

access to research facilities and equipment.

- Attract specialised start-ups from elsewhere to the regional clusters.

### 3.4 Support for scale-ups

A scale-up can either be an innovative and rapidly growing start-up or a mature business that is launching a new or improved product, service or business model, and that is expected to grow fast and in a sustainable manner. Scale-ups tend to be less focused on experimenting ideas and technologies, but more on stabilising their portfolio of products and services and on penetrating new markets (i.e. internationalisation, diversification etc.) As scale-ups are companies that have already validated their products on the market and might already have achieved significant traction in the local market, supporting their further growth requires a different type of support.

Support to scale-ups focuses on business acceleration and on helping companies realise their growth potential. This objective is pursued through networking with potential partners in domestic and foreign markets, facilitation of access to finance and investors (in particular for later stages of venture capital financing), the provision of specialised

advisory services for sales and marketing, human resource management or financial management. These are important factors for managing successfully the internal business transition process involved in growing into larger companies.



### **Advantages of supporting scale-ups through clusters**

- Overcoming the fragmentation of business support services to scale-ups by providing customised support within a cohesive and easily accessible ecosystem.
- Facilitation and acceleration of internationalisation through existing cross-country cluster partnerships and networks.
- Easier access to procurement by connecting SMEs and scale-ups with large potential buyers in industry and the public sector.
- Support to regional scale-ups and SMEs in exploring new opportunities in global value chains and identifying market potential for innovative products.
- Access to skills and talents through linkages with universities and vocational schools.
- Access to cluster programmes and funding for scale-ups.

Unlike the case of start-ups, an ecosystem/cluster approach to delivering support services to scale-ups has been developed more recently to address a market gap in the provision of services to this particular target group. While the development of combined packages of support services for start-ups often results in improving the survival rate of new business ventures, this does not ensure that these companies will be able to grow sustainably. Although scale-up support through clusters focuses on demand-side factors (management quality and market penetration), facilitating access to finance can also be provided by leveraging the cluster network of contacts.



### **Facilitating access to investment funds**

In cluster programmes, the provision of targeted financing for scale-ups is rare. Cluster programmes usually provide grants or loans to SMEs for specific purposes, such as development of new products and services or participation in matchmaking events abroad. Scale-up programmes focus on providing finance or on facilitating connections with potential investors (venture capital funds). In Europe, provision of these services is often hindered by the small size, as compared to the US, of venture capital funds and the early-stage development of venture debt markets<sup>54</sup>.

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<sup>54</sup> Gilles Duruflé, Thomas Hellmann, Karen Wilson, 2017. *From start-up to scale-up: examining public policies for*

*the financing of high growth ventures.* Bruegel working paper.

### **Example of facilitating access to finance**

The Milwaukee 7 (M7) Venture Capital Fund (US) provides capital to companies in the form of loans, equity or loan-to-equity (in a range of USD 50 000-USD 125 000). The Fund mainly targets advanced manufacturing and technology-focused companies in Southeast Wisconsin but is also open to financing high-growth companies, including early-stage companies that have recently completed the M7 accelerator programme and early-stage companies that require further product development and proof-of-concept. The fund aims to reduce the enterprise risks in relation to its business model and the technology developed, and to prepare the enterprise for follow-on rounds of funding. Depending on where the enterprise is in its development, the Fund can be used for a variety of purposes, including product development or market validation to secure additional investor funding, to purchase new equipment or marketing and sales assistance, testing and certification, intellectual property assessment and patent filing. The applicants must measurably demonstrate how the Fund would help the enterprise achieve its objectives and set out specific milestones.

See good practice factsheet A11 in Annex A



### **Internationalisation**

For enterprises operating in small local markets or offering niche technologies for specific industrial sectors or value chains, internationalisation is the most common strategy to achieve high growth. The provision of specialised advice on how to develop an international marketing strategy or on how to deal with export and regulatory barriers is often part of the training services offered to scale-ups. In addition, one of the most effective ways in which clusters can support scale-ups is the development of international collaborations that target specific industries, countries and value chains. These partnerships can be established thanks to the support of national or European cluster programmes (e.g. European Strategic Cluster Partnerships Going International), which aim to connect European enterprises with global value chains. In some cases, clusters may also have representative offices or antennae in countries that are particularly relevant for their members.



### **Tips and tricks for supporting scale-ups**

- Focus on internationalisation, market intelligence, finance and organisational development.
- Select scale-ups carefully and on a competitive basis. These need to be companies that have a proven high growth potential.
- Engage particularly innovative start-ups and scale-ups within the clusters in programmes building international cluster partnerships and organising matchmaking events.
- Establish partnerships with venture capital funds and organise meetings with investors providing later stage investments.
- Develop a package of services for targeting specific large and high-growth export markets (where the cluster members have competitive advantage) and find local intermediaries that can help open doors and facilitate matchmaking.

### 3.5 Building markets and value chains

A key element in promoting entrepreneurship through an ecosystem approach is the development of demand-pull measures that create demand for new products and services and stimulate their widespread availability. These interventions are often driven by the need to address environmental or social challenges (e.g. climate change, population ageing) or to ensure that countries keep their competitive advantages in strategic industries (e.g. artificial intelligence, space-related technologies)<sup>55</sup>.

Demand-pull strategies are particularly relevant for emerging clusters where there is a

need to create a sustained demand for the products and services offered by the enterprises within the cluster. These strategies consist of raising awareness about specific technologies through the extensive network of clusters. The initiatives involve campaigns that aim to communicate with public administrations on the value-added and societal benefits of embracing new technologies (e.g. energy efficiency, circular economy or digitisation). As an example, cluster organisations can partner with public administrations to put in place schemes for public procurement for innovation in specific industries. In parallel, they can also raise awareness about new technology trends with large businesses within their region or country.

<b>Examples of programmes to build markets &amp; value chains</b>	
<b>AWARENESS RAISING</b>	<b>SETTING THE CLUSTER'S SHORT- AND LONG-TERM TECHNOLOGY ROADMAP</b>
<p>The <i>Bioeconomy</i> project to create creating a Norwegian/Swedish bioeconomy supercluster by promoting environmentally friendly procurement practices in the public and private sectors. To this end, the programme connects all the actors in the public sector and in the cluster organisations in the macro-region to increase awareness of the products and the potential of the bioeconomy. Modern and tailored marketing tools are used to reach out to public administrations, SMEs and corporates.</p> <p>See good practice factsheet A4 in Annex A.</p>	<p><i>scale ai</i> is Canada's artificial intelligence supercluster for developing the new generation of AI-driven supply chains through a two-phase approach underpinned by a clear-cut technology roadmap. The first phase focuses on adapting and scaling existing supply chains by connecting supply chain users with AI-based supply-chain service providers. The second phase aims to develop four foundational AI-based technology platforms (operations-services marketplace and automated procurement; data-secure data exchange for integrated supply chain planning and execution, AI research-industrial and mobile Internet of Things, and infrastructure-risk and compliance).</p> <p>See good practice factsheet A12 in Annex A.</p>

<sup>55</sup> Mariana Mazzucato, 2013. *The Entrepreneurial State: debunking public vs. private sector myths*.

### 3.6 What are the main perceived challenges?

The European Observatory for Clusters and Industrial Change published a report in 2019 that provides an overview of cluster programmes in Europe and beyond<sup>56</sup>. According to the data from the related online survey conducted in 2018, objectives related to entrepreneurship, start-ups, spin-offs and scale-ups are not yet prominent elements of national cluster programmes across Europe. The relationship between national cluster policies and entrepreneurship/start-up promotion is not strong, whereas it is more prominent in policies supporting SMEs and scale-ups. National cluster programmes attach high priority to supporting SME participation in clusters and to supporting international cluster collaboration. This lack of focus on start-ups is also reflected in the relatively low number of support measures to promote entrepreneurship and foster start-ups deployed within national cluster programmes.

Similar results can be observed at the regional level, where the survey results show regional cluster programmes do not see promotion of entrepreneurship and start-ups as a priority. For them, support to SME competitiveness is the top priority. These results demonstrate that the focus of cluster policy is still largely on supporting innovation and competitiveness in established firms (i.e. the growth phase) and that the most relevant distinction in policy targeting is between large and small companies, with limited attention to the promotion of early-stage entrepreneurship and support to start-ups within specific industries.

There are several possible explanations underlying this finding. First, cluster organisations, which are in fact ideally placed to connect the different actors in the entrepreneurial ecosystem, are often not yet perceived as key actors in national and regional entrepreneurship support service infrastructure.

Second, cluster organisations themselves in some cases do not perceive entrepreneurship promotion as part of their core mission. This is because cluster organisations focus on providing services to their members and these are well-established companies. When cluster organisations act as an intermediary for public funding for innovative and collaborative projects, their support to start-ups might be limited by the rules attached to those funds (e.g. participation in projects is restricted to companies that can provide proof of audited accounts for at least three or five years, which rules out start-up participation in these programmes).

Third, university incubators or university programmes integrating entrepreneurial skills within university degrees have specialised more in supporting the early stage of entrepreneurial development. The lack of coordination among the different actors in the entrepreneurial ecosystem often creates a discontinuity between the services offered by universities and the services offered by business development agencies, including cluster organisations. The identification and selection of participants has become a much more demanding task for implementation agencies. In the past, entrepreneurship support programmes were overwhelmingly focused on supporting start-ups through

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<sup>56</sup> The cluster programme survey illustrates how many countries and regions actively pursue cluster policy and identifies specific patterns in cluster policy design and delivery. A specific dimension of the survey deals with

whether cluster policies are designed to support entrepreneurship and if these policies target start-ups and scale-ups.

grants, subsidised loans or the provision of facilities. The process for selecting participants was also less strict. New programmes for start-ups are more selective and follow the newly established firms through the entire business life cycle (i.e. address the specific needs of the different phases). Merely creating start-ups is not a stand-alone policy objective anymore. Recently, the policy focus has shifted towards newly established companies with high-growth potential beyond their local market.

A fourth key challenge consists of connecting local start-up and scale-up hubs across Europe to create more competitive and more dynamic ecosystems. Clusters have yet to fully tap the potential for acting as connectors between different European ecosystems<sup>57</sup>. When cluster organisations receive their funding from regional and national sources, international collaboration may be limited by the specific

rules that apply to those funds. These do not adequately take into consideration that digitalisation and new production technologies have made it even more important to add global nodes to the local ecosystem, including for industrial clusters. Disruptive innovations are also more likely to happen by networking globally, whereas linking companies at the local level is more likely to generate incremental innovations through the physical proximity<sup>58</sup>.

Linking entrepreneurship and scale-up policies to value chain policies is a new concept, which makes it necessary to position emerging European value chains within global value chains. Collaboration between clusters in the same or in related value chains may involve companies that potentially compete with each other, implying that such collaboration needs to be carefully designed<sup>59</sup>.

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<sup>57</sup> World Economic Forum's Digital Leaders of Europe, 2018. *Declaration on a Pan-European Ecosystem for Innovation and Entrepreneurship*.

<sup>58</sup>Leceta M., Renda A., Könnölä T., Simonelli F., 2017. *Unleashing Innovation and Entrepreneurship in Europe. People, Places and Policies*. Report of a CEPS Task Force.

<sup>59</sup> Trans Up project, 2017. *Cross landing Services for Start-ups and Scale-ups in the Alpe-Adria Region*.

# 4 Good practice examples

This chapter introduces the key features of a number of selected good practice examples of entrepreneurship support through clusters. These good practices constitute a mix of support measure types, delivery mechanisms and implementation frameworks that can be activated within clusters to boost entrepreneurship.

## 4.1 Selection and shared attributes of good practice examples

By reaching out to national start-up organisations, the European Cluster Collaboration Partnership and the European Secretariat for Cluster Analysis (which provides quality labels for cluster organisations), this guide identified and analysed 36 on-going programmes for start-ups and scale-ups implemented in different EU countries at the national and local level (see Annex B). From this list of programmes, 12 good practice examples were selected (see Figure 6 and 2-page fact sheets in Annex A for each good practice) to illustrate how entrepreneurship can be promoted and accelerated by creating entrepreneurial ecosystems through clusters.

The good practices were selected by combining the following **criteria**:

- focus on programmes for start-ups and scale-ups that connect the different actors of the innovation and entrepreneurial ecosystems (i.e. public institutions, industry associations, universities and research centres, incubators, cluster organisations, private financers) or that are implemented by a cluster organisation;

- the innovative character of the programme in relation to the national context to ensure representativeness and geographical coverage across different European regions; and
- the inclusion of programme examples from some of the 12 EU regions involved in the Pilot Action for regions in industrial transition<sup>60</sup> to show how the promotion of entrepreneurship can be an effective driver of industry renewal and job creation in declining industrial areas.

The good practice examples are a representative mix of the type of entrepreneurship support programme that different cluster entities implement within clusters.

- (i) They address different stages of the entrepreneurial life cycle (from early-stage entrepreneurship to acceleration) through the provision of different packages of services (entrepreneurial training, provision of facilities, networking, access to finance).
- (ii) These programmes are delivered through a variety of implementation arrangements in different industries, i.e. different organisations are mandated to implement the programme.
- (iii) Many have evolved over time and learned crucial lessons.

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<sup>60</sup> These regions are: Hauts-de-France (France), Norra Mellansverige (North-Middle Sweden), Piemonte (Italy), Saxony (Germany), Wallonia (Belgium), Cantabria (Spain),

Centre Val de Loire (France), East-North Finland, Grand-Est (France), Greater Manchester (United Kingdom), Lithuania, Slovenia.

*Figure 6 - The selected good practice examples of entrepreneurship support programmes*



*Source: Authors*

The selected programmes share a number of **common attributes of good practice examples**, which are also identified in the economic literature on entrepreneurship support as enabling factors in supporting start-ups and scale-ups successfully. These attributes are the following:

- The programmes are implemented by ecosystem connector/integrators (cluster organisations, business service providers, universities, regional development agencies) whose key role consists in facilitating the integration of newly established businesses into different networks (of researchers, companies, investors, exporters) and innovation ecosystems.
- Partnerships between different cluster stakeholders are key elements of programme design and delivery.
- Programme design considers the specificities of the local entrepreneurial context, builds on local assets and links to smart specialisation strategies.
- Programme objectives are no longer limited to setting up new business ventures, but to ensuring that the

newly established businesses have a high survival rate and fully realise their growth potential.

- The type of support provided differentiates between the specific needs of R&D-intensive start-ups, which have a longer incubation period, and other types of innovative business.
- Programmes follow a systemic approach and address multiple dimensions of the entrepreneurial ecosystem. Coordination with other forms of public support is ensured to help start-ups and scale-ups capture synergies between different sources of funding and support.
- Selection of participants is strict, competition-based and targets a well-defined group of companies, especially in acceleration programmes for start-ups and scale-ups.
- Access to public funding (i.e. public grants or subsidised loans) is combined with facilitating access to private investors and financers.
- Learning from other entrepreneurs and role models (within the same or cross-

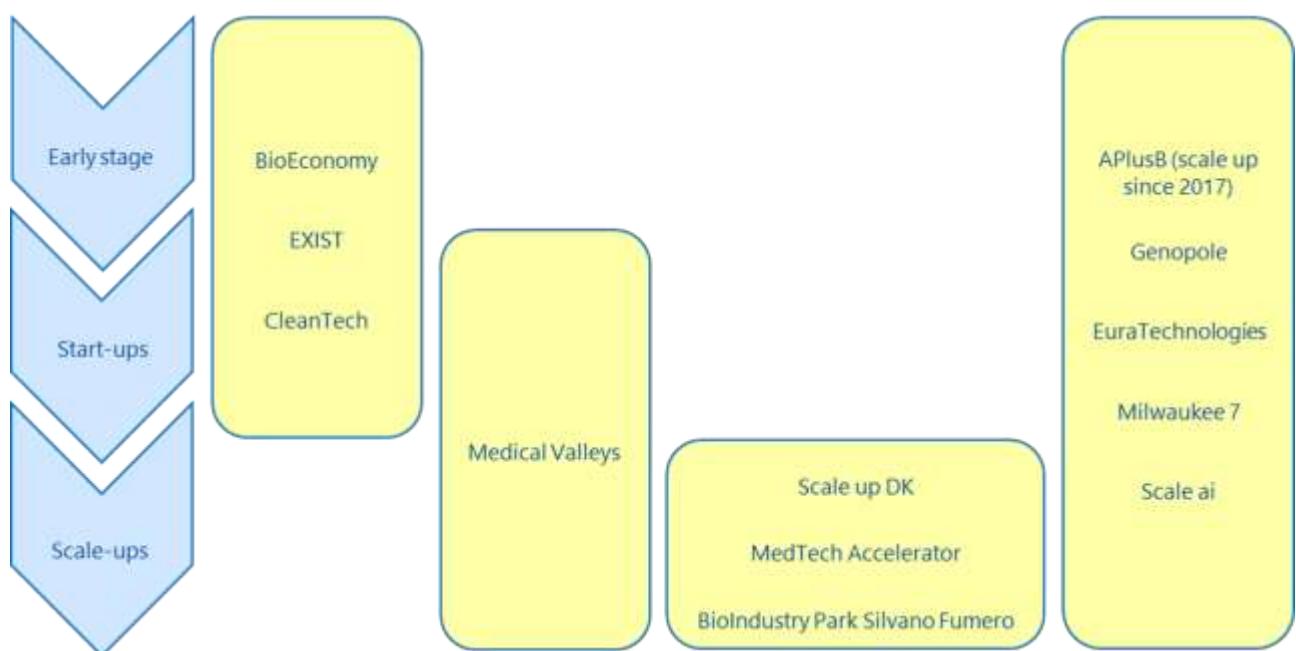
sectoral industries) is a key element of the services offered.

- The focus is not only on bringing technical innovations to the market but also on developing innovative business models by combining existing technologies into new business processes.
- The creation of start-up and scale-up communities is encouraged, along with integrating them within clusters' local and external networks.

## 4.2 Combining services to address different phases of the entrepreneurial life cycle

Most of the selected good practice examples of entrepreneurship support through clusters are programmes structured in different components or initiatives that specifically address one or two stages of the entrepreneurial business life cycle (Figure 7).

*Figure 7 - Business life cycle focus of the selected good practice examples*



*Source: Authors*

The success of these programmes in achieving the intended objectives rests on the consistency of their underlying theory of change (i.e. the services provided are delivered to reach the intended beneficiaries effectively and to meet their needs). There is no one "right" way to design such programmes,

although combining certain services can help increase the impact (see Figure 5 in chapter 3). Table 2 below shows the variety of initiatives that have been activated by the good practice examples to foster entrepreneurship in their region.

*Table 2 - Examples of components of the selected good practice examples by entrepreneurial life cycle stage*

ENTREPRENEURIAL STAGE	SERVICES PROVIDED
<b>Early-stage entrepreneurship</b> 	<ul style="list-style-type: none"> <li>Awareness-raising activities in schools and for young people (EuraTechnologies, EXIST, CleanTech)</li> <li>Targeted skills and education activities in specific industries (Genopole, scale ai, Bioeconomy)</li> <li>Exposure to entrepreneurship principles and skills through workshops (Genopole, CleanTech)</li> <li>University awards for promoting an entrepreneurial culture (EXIST)</li> <li>Technology transfer/commercialisation (EXIST, AplusB, Genopole, Milwaukee).</li> </ul>
<b>Start-up</b> 	<ul style="list-style-type: none"> <li>Access to incubator facilities, testing labs, research centres (AplusB, EXIST, Genopole, EuraTechnologies).</li> <li>Customised mentoring by academics, consultants or entrepreneurs (AplusB, Genopole, EuraTechnologies, Bioindustry Park).</li> <li>Provision of grants for training and for testing (EXIST, APlusB).</li> <li>Provision of loans (Milwaukee).</li> <li>Industry-specific training and workshops (Medical Valley, Genopole, EuraTechnologies).</li> <li>Networking with other start-ups or with corporate partners within the cluster (Medical Valley, CleanTech, EuraTechnologies, Genopole, Bioeconomy).</li> <li>Counselling to test the viability of the business model (EXIST, Genopole, EuraTechnologies).</li> <li>Crowdfunding campaigns (BioIndustry Park, Medical Valley).</li> <li>Competition and innovation prizes (Medical Valley, Genopole).</li> </ul>
<b>Scale-up</b> 	<ul style="list-style-type: none"> <li>Intensive mentoring and training (Scale-Up Denmark, MedTech, Milwaukee).</li> <li>Provision of individual advisory services with a focus on IPR and regulatory issues (BioIndustry Park, Genopole (Booster), EuraTechnologies).</li> <li>Access to private investors, business angels, venture capital (BioIndustry Park, Scale-Up Denmark, Medical Valley, EuraTechnologies, Genopole, Milwaukee).</li> <li>Networking (BioIndustry Park, Scale-Up Denmark, EuraTechnologies, Genopole, Medical Valley, scale ai).</li> <li>Access to procurement opportunities (Medical Valley, BioIndustry Park, Bioeconomy).</li> <li>Provision of office space (BioIndustry Park, Genopole, EuraTechnologies).</li> <li>Internationalisation support (BioIndustry Park, EuraTechnologies, Genopole, scale ai).</li> <li>Provision of risk capital (Milwaukee)</li> </ul>

## 4.3 Different implementation mechanisms and organisations

Within clusters, the types of organisation entrusted with delivering support services for start-ups and scale-ups vary (Table 3). **Universities** are generally well positioned for targeting early-stage entrepreneurship or start-ups in their early phase of development. **Business incubators or accelerators**, which can be run either by public or private operators or by cluster organisations, focus more on start-up acceleration and services for scaling up.

The provision of individual business advisory services for the acceleration of start-ups and scale-ups is usually contracted out to **specialist private operators**. In Denmark, the operation of the Scale-Up programme (see fact sheet A1 in Annex A) is entrusted to different types of private operator. As an example, six of *Scale-Up Denmark's* hubs (in Cleantech, Food, Healthcare, Smart Industries, Biotechnologies and ICT), are run by Accelerance, a privately run business accelerator, with others using **consortia with or linking to cluster organisations**. The *Bioindustry Park* (see fact sheet A1) has a collaboration agreement with a consulting company specialised in providing strategic advisory services to innovative start-ups.

*Table 3 - Implementing organisations and the role of cluster organisations*

Implementing Organisation	Cluster Organisation	University	Regional Development Agency	Business Service Providers	Incubator / Accelerator
Role Of Cluster Organisations					
Implementing organisation	MedTech Accelerator, Medical Valley, Bioindustry Park, CleanTech; Genopole		Milwaukee	scale ai	
Partners		EXIST	Bioeconomy	Scale-Up Denmark	Eura-Technologies
No role	AplusB*				

\* Institutionalised centres within universities, includes science parks

*Source:* Authors from Annex A

National programmes have more challenging implementation frameworks due to the need to strike a balance between developing a coherent and consistent approach, and the implementation of tailored territorial approaches. The selected national good

practices show how these two objectives can be successfully combined. In these cases, programme design and coordination are centrally managed to ensure a common implementation framework, shared objectives and a common set of performance indicators.

However, service delivery is assured by local actors, and implementation is based on regional ecosystems (*EXIST*, *AplusB*) or specific industries and value chains (*Scale-Up Denmark*). As an example, the *AplusB* programme is delivered by eight specialised regional centres that form the Austrian business incubator network, while *EXIST* is channelled through German universities.

In spite of differences in programmes' institutional and implementation frameworks, a number of **key lessons** can be learnt from good practices in terms of the implementation mechanism.

- Programme design and delivery is based on collaboration between different entities within clusters (e.g. the co-creation of the skills development plan, joint use of mentors from business and academia, sharing of facilities).
- Cluster organisations play a key role, either as the organisations responsible for delivering entrepreneurship support programmes (less frequent scenario), or as facilitators and enablers (e.g. linking would-be entrepreneurs and start-ups with the entrepreneurial ecosystem).
- Professional service providers are used to ensure the highest possible quality and relevance of the support provided.

## 4.4 Evolving over time

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Some of the good practices included in this Smart Guide have more than 15 years' experience of implementation. These programmes have been through different phases that were determined by a shift in political priority from supporting start-ups and spin-offs to enhancing the growth possibilities of these newly established companies. They have thus often learned about the advantages and disadvantages of various implementation approaches.

In addition, the focus of acceleration programmes is no longer on universities and high R&D-intensive spin-offs, but has been enlarged to include different types of innovators. In parallel, the offer of programmes focusing on acceleration and on the commercialisation of innovation, which combines competencies in different areas (i.e. business, economics, finance), has increased and expanded beyond the ICT sector.

These changes have resulted in the provision of support for the acceleration phase of start-ups and university spin-off by programmes implemented by university and technology parks that initially worked only as specialised technology transfer centres. This is the case of *EXIST* (Figure 8), *AplusB* and the *BioIndustry Park* entrepreneurship programmes.

Figure 8 - EXIST: From promoting an entrepreneurial culture to supporting start-up development

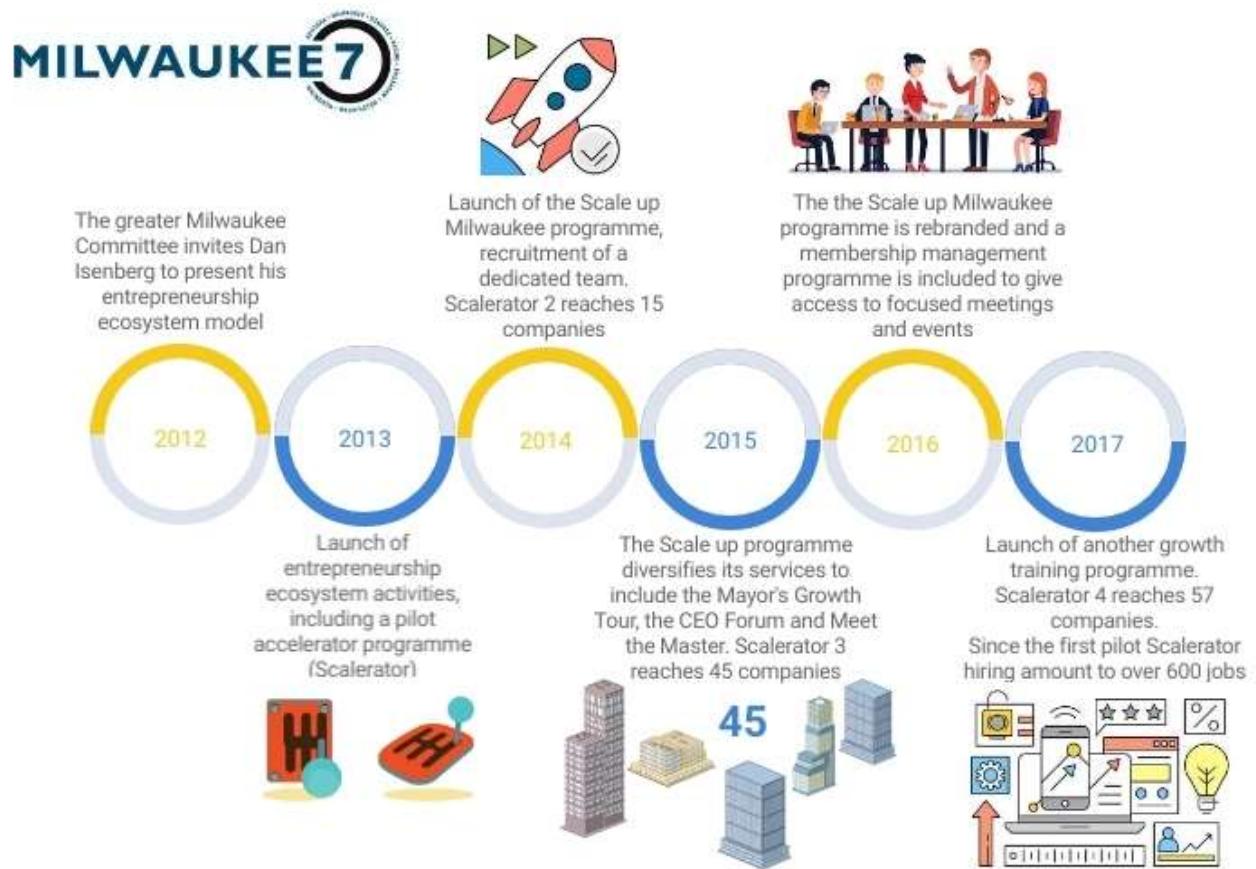


*Source:* Authors based upon Marianne Kulicke, 2014. 15 Years of EXIST University-based start-up programmes. Development of the EXIST funding programme between 1998 and 2013

Another interesting example of **policy experimentation and adaptation** is the iterative programme design developed by the *Scale Up* initiative within the *Milwaukee7* programme to provide the right support to scale-ups (Figure 9). The programme has been gradually, but rapidly, scaled to fill a gap in the provision of services for high-growth

enterprises and to accelerate the pace of industrial modernisation in the region. Positive feedback from monitoring and evaluations fed over time into new programme components. The setting up of a dedicated team to deal with the scale-up programme was also a sign of a shift in policy priorities.

*Figure 9 - Experimenting, learning and scaling of the Scale-up programme within Milwaukee 7*



*Source:* Authors based on the Scale Up Milwaukee impact report 2013-2017

# 5 Conclusions and recommendations

This chapter summarises the main conclusions from analysing the good practice examples and the literature review. It introduces recommendations for cluster policy-makers and cluster organisations for designing and delivering effective measures to foster entrepreneurship as well as for entrepreneurship policy-makers to make better use of clusters.

Factors that determine the success or failure of public initiatives supporting entrepreneurship stem from the capacity to create more start-ups that can scale-up sustainably. The quality of start-ups and spin-offs improves if these are supported by and anchored in the regional business and innovation ecosystem. To this end, clusters form collaborative environments where public and private actors can provide a coordinated and coherent mix of support instruments for accelerating entrepreneurship.

There is evidence to show that building a vibrant and resilient start-up ecosystem required links to be established between the different actors of the entrepreneurial ecosystems, including universities, technology transfer centres, providers of innovation services, service and manufacturing firms, providers of public funding and private sector venture capitalists. This approach, which works well within clusters, is now more widespread in Europe thanks to the support provided by public policies at the European and national levels.

This guide shows that entrepreneurship support through clusters can be a driver of industrial modernisation and job creation. The key to success is for entrepreneurship in clusters to be delivered within a coherent and cohesive set of measures that leverage the specific advantages and competencies of each actor in the entrepreneurial ecosystem. Entrepreneurship support through clusters can address all the different phases of the entrepreneurial life cycle avoiding the

fragmentation of past programmes. It can also combine vertical, industry-specific knowledge (which is necessary to understand the functioning of specific markets) with horizontal entrepreneurial skills. Finally, clusters create a favourable environment for the co-creation and co-design of entrepreneurship support programmes, which integrate the vision and expertise of different stakeholders (including local entrepreneurs, SMEs and corporates).

Entrepreneurship support through clusters goes beyond the provision of entrepreneurship services by cluster organisations. Cluster organisations can play a key role in supporting entrepreneurship, even if the provision of entrepreneurship services by these organisations is constrained by a number of factors, such as limited organisational and budgetary resources. Universities, technology parks, public and private business incubators and accelerators, have increased their industry focus and have developed an offer of tailor-made entrepreneurship services that embraces the different stage of the entrepreneurial life cycle.

As always, there is no one-size fits all approach, but a large variety of support schemes can be developed to address the specific needs of early-stage entrepreneurs, start-ups and scale-ups in a given region and industry. By looking at the experience of the good practice examples, the following Do's and Don'ts can be identified as guiding principles (see Table 4 below).

Table 4 - Do's and Don'ts for boosting entrepreneurship through clusters

 Do's	 Don'ts
<ul style="list-style-type: none"> <li>• Gather and <b>use a diverse group of stakeholders</b> to develop regional cooperation around cluster initiatives supporting entrepreneurship (including private and public sector representatives, investors, individual entrepreneurs, university faculties and local economic development support groups).</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Let one organisation implement entrepreneurship support on their own</b> (without reaching out to and teaming up with other relevant stakeholders).</li> </ul>
<ul style="list-style-type: none"> <li>• Analyse <b>local entrepreneurial conditions and address bottlenecks that hold back overall performance through a consistent and coherent set of actions</b> (e.g. focusing on identified weaknesses, such as <b>skills mismatch, attitudes</b> etc.)</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Develop stand-alone and fragmented actions</b> that reinforce only one dimension of the entrepreneurial ecosystem (e.g. developing an entrepreneurship programme that focuses extensively on popular entrepreneurship activities without considering the specificities of the regional economy and local assets).</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Co-design and co-implement</b> entrepreneurship programmes with cluster members, including SMEs (i.e. through surveys, testing and co-creation workshops).</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Implement a new or changed entrepreneurship programme without consulting or testing</b> with the main target groups, e.g. start-ups, scale-ups and SMEs.</li> </ul>
<ul style="list-style-type: none"> <li>• Design measures that <b>differentiate among the needs</b> of would-be entrepreneurs, start-ups, scale-ups and SMEs.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Apply a one-size-fits all approach</b> without considering the specific needs in the different business life cycles.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Identify, engage and use cluster initiatives</b> and cluster organisations to promote a smart entrepreneurship acceleration programme.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Focus only on increasing the number of start-ups</b> without supporting their survival and growth phase and without connecting them to existing cluster support measures.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Facilitate the creation of networks of start-ups and scale-ups</b> for mutual support, the exchange of knowledge and experience, and cross-fertilisation.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Just launch a business plan competition</b> without providing feed-back loops or opportunities for entrepreneurs to meet their ecosystem peers and mentors.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Break out of existing policy silo patterns</b> by combining different tools, programmes, support actors and delivery mechanisms.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Stay within the remits of only one policy area</b> (e.g. SME promotion, labour market policies etc.) and only coordinate overlaps and build synergies once the programme is launched.</li> </ul>

# Annex A -Good practice factsheets

## A.1 Scale-Up Denmark



Geographical scope	Denmark	Start/end date	2016-2019
Industry	Experience economy & Tourism; Offshore Industry; Energy Efficient Technologies; Food; Health & Welfare Technology; Bio Economy & Industrial Symbiosis; Life Science; ICT; Smart Industry; Cleantech; Maritime Industry; Robotics	Focus	Accelerate growth in SMEs through elite training centres and collaboration with industry-specific actors of the ecosystem
Programme website	<a href="https://scale-updenmark.com">https://scale-updenmark.com</a>	Contact information	Søren Røn: soro@se.dk

### Description

The purpose of the Scale-Up Denmark initiative is to help high-growth companies reach their full potential for growth and to establish an elite of high-growth companies in national priority industries. The initiative was started by the five Danish Regions and the Danish Business Authority and is supported by the European Regional Development Fund (ERDF) and private funding. Scale-Up Denmark is delivered through 12 elite centres for business development within 12 different industries.

### Services provided

The programme provides business training focused on the individual needs of each participating company. The selection of companies is more critical than in other business support programmes. Co-financing from companies increases the demand for high-quality services. The training (approximately 180 hours of individual and specialised counselling) focuses on industrial and entrepreneurial challenges to ensure that the solutions developed respond to market needs. Experience sharing and learning from peers is at the heart of the programme. The

business ideas and models of participating companies are challenged by corporate partners and successful entrepreneurs working in the same industry. The Scale-Up centres collaborate with the Danish business support ecosystems, including seed and venture capital funds. The selection of participants is a key element of the programme. These can be either innovative start-ups or SMEs with a product on the market and fully committed to an ambitious business development project.

### Role of cluster

The concept of the elite centres established within the framework of Scale-Up Denmark is that they will work with the entire Danish business ecosystem, including with cluster organisations. In some centres (e.g. Energy-Efficient Technologies) the cluster organisation is part of the consortium that establishes the scale-up initiative. In these cases, collaboration with the cluster organisation is well structured. In other cases, it works on an ad-hoc basis.

## **Evidence of success**

The programme has been highly innovative because the approach builds on connecting ecosystems, including large Danish companies, and has a clear focus on companies' investment maturity. The use of this approach is perceived as very valuable among most participants because it helps mobilise relevant resources (e.g. knowledge, capital, network). Scale-Up Denmark is also considered the most focused accelerator programme available in Denmark<sup>61</sup>. The outputs and outcomes that it is expected to achieve at programme completion are that at least 350 growth companies be participating in the programme and that, of the participating companies, at least 75% continue to achieve annual growth of 20% after project end.

## **Potential challenges**

- With five different private operators of the training centres, there are differences in the methodologies applied for training and for facilitating collaboration between the different ecosystem actors. This makes it challenging to communicate a clear value proposition of the programme to potential participants.
- The differentiation between public business development programmes and the Scale-Up Denmark's offer of services is not always well understood by companies and the services offered by the elite centres are sometimes in competition with the services offered by other business development services.
- Participant recruitment depends on the ability of the operator, the location and the business model of the elite centre rather than on the characteristics of the ecosystem.
- Facilitation of innovation across sectors can be limited due to the strong sector focus of the programme.
- Funding Scale-Up Denmark as a cross-regional initiative ensured mobilisation of a critical mass of vertical (sector-specific) and horizontal (entrepreneurship) competences, while all regional specialisations were supported. However, funding post-2019 remains uncertain.

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<sup>61</sup> Cowi, 2017. *Flere Vækstvirksomheder. Midtvejsevaluering*. Mid-term evaluation

## A.2 Bioindustry Park Silvano Fumero



Geographical scope	Piedmont region, Italy	Start/end date	1998-
Industry	Life science	Focus	Supporting start-ups' and SMEs' growth
Programme website	<a href="http://www.bioindustrypark.eu/en">http://www.bioindustrypark.eu/en</a>	Contact information	Fabrizio Conicella conicella@bioindustrypark.it

### Description

The Bioindustry park was created in an area (Canavese, north-east of Turin in the Piedmont region) that had been classified as an area in industrial decline. The area hosted many SMEs that worked as sub-contractors to Olivetti (electronics) or Fiat (automotive). Towards the end of the 1980s, this model and the related supply chains suffered significant setbacks. A rapid decline in economic activities brought about the need to diversify the local economic structure. Against this backdrop, the project of the Bioindustry Park emerged as a public-private partnership to transform the local economy. The objective of the park was to create a cohesive, dynamic and competitive environment for life science businesses to be recognised locally, nationally and internationally for their excellence. The park's development has been underpinned by a long-term strategic vision. It first developed to provide facilities for innovative start-ups in the life science sector; it subsequently provided acceleration services by establishing a platform of services for companies; it finally transformed into a network hub by connecting different actors in the value chains both nationally and internationally.

### Services provided

The Bioindustry Park offers various innovative services to support innovative start-ups and SMEs. EX2O is an online commercial platform to support companies and research institutes in identifying tailored pathways for developing

sustainably. The services provided include technology scouting, technology audit and evaluation, intellectual property management, project design and management, business development and international network consulting services, training sessions on sector development and team management. To provide these services the park signed an agreement with InnoVists Lab to support start-ups in the definition of their strategic market communication strategy, in preparing their business plan and in looking for investors. The park also collaborates with MamaCrowd, an Italian platform for equity crowdfunding.

### Role of cluster

Bioindustry Park acts as the cluster managing company of BioPmed (Piedmont's life science innovation hub). BioPmed holds a "Gold" label for Cluster Management Excellence, which demonstrates the good performance of the cluster management and its commitment to the achievement of ambitious objectives. The Piedmont region's life science cluster is relatively small compared to other life science clusters in Italy (Lombardy) or in Europe; its strength stems from the fact that it is based on a well-structured and cohesive network. BioPmed prioritises internationalisation activities and the establishment of multi-regional partnerships to overcome the structural limits of the regional market. This has proved to be an asset for the companies hosted within the Bioindustry Park.

## **Evidence of success**

The Bioindustry Park represents one of the major examples of successful territorial development achieved through innovation in an emerging industry in Italy. One of the major strengths of the park, as compared to similar initiatives, has been its capacity to sustain its activities without the continuous support of public funds. At present, nearly 94% of its revenue is generated through commercial activities. The companies hosted in the park have greatly benefited from international cooperation with other clusters and technology centres/incubators, so that at present about 85% of the risk capital come from abroad.

Unlike past examples of business incubators or technology parks in Italy, the Bioindustry Park focuses on supporting the growth of start-ups and scale-ups, rather than on creating more companies through the provision of general business development services (e.g. a one-stop shop for would-be entrepreneurs). The support provided to start-ups and scale-ups by BioPmed has proved to be successful because of the strong market focus, which pursues global markets, and which prioritises the fulfilment of client needs through innovation.

## **Potential challenges**

- The long-term commitment of regional industrial policy to developing a life science cluster in the Piedmont region has allowed the park to develop a long-term vision and to build a solid strategic innovation ecosystem. However, although the park is financially almost self-sustaining, it can be affected by changes in regional policies on cluster development. Further expansion of the park, which is currently running at full capacity, depends on the availability of public funds.
- The growth of the cluster and its member companies depends very much on the availability of funding for cross-regional projects that would enhance collaboration between similar clusters in Italy and Europe. Growing beyond the European market will be difficult without further public support.

### A.3 EuraTechnologies incubator and accelerator



Geographical scope	Hauts de France region, France	Start/end date	2008-
Industry	ICT- big data, Internet of Things, cybersecurity	Focus	From early-stage entrepreneurship to business acceleration
Programme website	<a href="https://en.EuraTechnologies.com/">https://en.EuraTechnologies.com/</a>	Contact information	Yann Kervarec kervarec@EuraTechnologies.com –

#### Description

EuraTechnologies is Hauts de France's ICT incubator and accelerator supporting start-ups and companies in tackling digital transformation. It represents one of Lille's most important urban and industrial rehabilitation projects. The incubator was developed in 2009 on the site of a former textile factory thanks to a public-private partnership agreement between the Hauts de France region, the city of Lille and the metropolis of Lille. EuraTechnologies has played a key role in establishing a vibrant business ecosystem in a new industry where start-ups and large enterprises work together. It has developed as a full-service innovation hub for start-ups and SMEs, and offers differentiated services for start-ups (START programme) and scale-ups (SCALE programme) with a focus on big data, the Internet of Things and cybersecurity.

#### Services provided

EuraTechnologies offers several services to start-ups and scale-ups and is also active in promoting the dissemination of digital skills and careers in the digital sectors. To increase awareness of the skills of the future, EuraTechnologies organises activities and workshops in computer programming and robotics targeting children and teenagers. The Start-up Incubator – START programme – provides would-be entrepreneurs with consulting services and mentorship to start their own business in 80 days. Participants

have access to 20 training sessions with experts, individual coaching sessions, networking meetings and mentoring sessions with experienced entrepreneurs who are members of EuraTechnologies. EuraTechnologies has also developed an accelerator programme – SCALE – which is a 9-month programme in two parts: 1) Strategy and Structuring (3 months), which provides training on human resource, legal, management and corporate culture; and 2) Go-to-Market (6 months), which focuses on sales, negotiation, marketing and growth hacking. Thanks to its network of international offices (Belo Horizonte, Dubai, New York, San Francisco, Shanghai) EuraTechnologies also supports the internationalisation of ICT start-ups. EuraTechnologies also provides office spaces to the R&I departments of enterprises, SMEs or corporates working in the retail, healthcare, transport and energy sectors.

#### Role of cluster

EuraTechnologies is not managed by a cluster organisation, but its offer of entrepreneurship support services is based on a cluster approach which aims at nurturing a community of start-up and scale-up companies that are well integrated with and supported by the entire regional entrepreneurial ecosystem. EuraTechnologies collaborates with all the relevant ecosystem actors and has linkages with multiple clusters given that the products and services developed within EuraTechnologies can apply

in different sectors. PICOM, France's *pôle de compétitivité* for retail and industry, offers platforms for testing how the technologies developed by EuraTechnologies start-ups (retailTech and e-commerce) can apply in the retail sector. A collaboration with Eurasanté, the development agency dedicated to tech transfer and business development in the life sciences sector in Hauts de France, focuses on promoting innovation in the use of big data to be deployed in the biotechnology sector. INRIA Tech, the French research institute for digital sciences, has a dedicated space within EuraTechnologies to promote the latest technological developments and to encourage the university-to-business transfer of digital technologies.

### Evidence of success

Putting companies at a very different level of development (start-ups, scale-ups, SMEs, corporate antennae) together in the same space helps increase the overall quality of the business ecosystem, the exchange of experience and multiply the possibilities for collaboration. Establishing an open and dynamic ecosystem has been the major

enabling factor of EuraTechnologies' success. The selection of participants for both the start-up and the scale-up programmes is a key success factor. This is based on an open but highly competitive process which assesses the solidity of the business idea and the commitment of the founders. Compared to university incubators, the support provided is time-limited and intensive.

In 2014, Fundacity<sup>62</sup> classified EuraTechnologies as one of the most active accelerators in Europe (3rd place). It was the first French incubator and accelerator to be classified in the top 10 European business accelerators. Since its foundation, EuraTechnologies has supported over 300 enterprises and currently hosts more than 4 000 employees.

### Potential challenges

- To ensure that the support provided brings actual benefits to the regional economy, the companies that have benefited from EuraTechnologies' programmes need to be established in the Hauts de France region.

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<sup>62</sup> Fundacity is a platform connecting start-ups and scale-ups with potential investors. In 2014, it prepared an accelerator report for Europe, Latin America and Asia.

## A.4 The Bioeconomy Region



Geographical scope	Regions of Värmland and Dalarna in Sweden with the county municipalities of Akershus, Hedmark, Oppland and Østfold in Norway	Start/end date	2017-2020
Industry	Bioeconomy - forestry	Focus	Supporting growth and competitiveness in SMEs and start-ups
Programme website	<a href="https://bioeconomyregion.se/innovation-and-industrial-transformation-in-the-forest-bioeconomy/">https://bioeconomyregion.se/innovation-and-industrial-transformation-in-the-forest-bioeconomy/</a>	Contact information	Helen Vogelmann helen.vogelmann@regionvarmland.se Monika Svanberg Monika.Svanberg@afk.no

### Description

The inland areas of Scandinavia (6 regions taking Norway and Sweden together) offer exceptional potential for developing a bioeconomy<sup>63</sup> supercluster due to the abundance of forestry raw material. In these European regions, the forest-based bioeconomy has strong research and high technological competence, great business potential and a well-developed innovation ecosystem. However, awareness of the potential of the locally produced bio-based products remains low, commercialisation levels are below potential, and there is little capacity to take advantage of business opportunities. Against this backdrop, the programme aims at changing behaviours within the public and private sector by introducing more environmentally friendly procurement procedures and supply chains with both the public and private sectors.

The programme helps SMEs speed up the whole process from innovation to commercialisation. It also supports large

companies to seize greater opportunities to advance through new innovations and technologies, and investors to identify interesting businesses opportunities. The programme is supported by the Sweden/Norway Interreg programme.

### Services provided

The programme has four components: i) increase SME innovation capabilities and capacities in the bioeconomy sector; ii) increase efficiency in the macro-region by strengthening cross-border collaboration of clusters, incubators, testbeds and business support agencies; iii) increase the availability of risk capital; and iv) increase brand awareness of the inner Scandinavian region as a global hotspot in the bioeconomy. The programme also applies modern marketing tools to raise awareness of the importance of transitioning towards more sustainable consumption and production patterns.

<sup>63</sup> Bioeconomy refers to using natural materials as inputs for the process industry minimising energy use and waste.

## **Role of cluster**

By working on both the demand and the supply side with a variety of well targeted stakeholders in the macro region, the ultimate programme aim is to establish a bioeconomy supercluster. The Paper Province cluster, which holds a "Gold" label for Cluster Management Excellence, plays a vital role in the project because of its capacity to engage and collaborate with the different ecosystem actors in Norway and Sweden. The programme reaches out to 15 regional cluster organisations in order to increase the size of the forest-based bioeconomy market. Other programme partners include the regional governments in both countries, universities and research institutions, the private sector and some 30 demonstration and testing facilities in Norway and Sweden.

## **Evidence of success**

The programme builds on the regional assets: the availability of raw materials and oil industry expertise coupled with long experience and strong, innovative power. The programme has yet to achieve its objectives, given that it was launched in 2017 and that building new

networks, communities and ecosystems is a long-term process. The programme is expected to increase the innovation capabilities and growth potential of about 200 SMEs, support the internationalisation of at least seven SMEs and increase market access via public procurement (e.g. innovative procurement) of at least 30 SMEs.

## **Potential challenges**

- The large geographical coverage of the programme creates a need to develop different ways of supporting interaction amongst participants.
- Creating a supercluster (i.e. the need to move from an industrial community to a community based on open innovation) is a long-term project that requires different actors spread over a large area to be brought together for the achievement of a common objective.
- The programme's success is dependent on a shift in existing consumption and production patterns, business models and working culture, which can take a long time to materialise.

## A.5 AplusB incubator network



Geographical scope	Austria	Start/end date	2002-
Industry	Mechtronics, life science, creative industries, advanced materials, energy efficiency and green technologies	Focus	Support innovative start-up ecosystems
Programme website	<a href="https://www.aplusb.biz/">https://www.aplusb.biz/</a> <a href="https://www.aws.at/foerderungen/aws-aplusb-scale-up/">https://www.aws.at/foerderungen/aws-aplusb-scale-up/</a>	Contact information	Dipl.-Ing. Soren Charareh <a href="mailto:s.charareh@aws.at">s.charareh@aws.at</a>

### Description

AplusB – “Academia plus Business” – is the Austrian incubator network established to create bridges between research (academia) and business. The programme targets spin-offs from academic and non-university research organisations to establish a vibrant community of innovative start-ups. The programme has been running since 2002 with the main objective of increasing the number of academic spin-offs and improving their survival rate and growth perspectives. The programme is designed and coordinated at the national level, but delivered through eight regional AplusB centres, which integrate local specificities and industry specialisations. In 2016, the programme added a new focus on scale-ups which promotes growth in the domestic and foreign markets for high R&D-intensive start-ups. Unlike the past programme, which promotes pre-industrial collaborative research, AplusB Scale-up targets start-ups that have already developed a business idea and a product. Implementation responsibilities were transferred from the FFG Research Studios Austria programme to Austria Wirtschaftsservice (AWS), the Austrian Federal promotional bank whose mission is to support young innovative start-ups. AWS is more business-oriented and is also better positioned to identify potential synergies with other financial instruments.

### Services provided

The core of the AplusB programme consists of the eight regional AplusB centres. Within these centres, university graduates and researchers are offered a package of services that are designed to provide optimal conditions for the gradual growth of R&D-intensive start-ups. The services provided included counselling, know-how and support (subject-specific tutoring and coaching, management consultancy, entrepreneurial training), access to infrastructure facilities (laboratories, offices), and financial support (loans, subsidies). The APlusB centres collaborate with the entire Austrian ecosystem. This allows the participating start-ups to get in touch with potential buyers, partners and investors. To achieve higher commitment from the applicants to the AplusB Scale-Up programme, 30% of the cost is to be co-financed by the beneficiaries. In the new programme, the support can be provided for up to 5 years to take into account the longer incubation period needed for many R&D-intensive start-ups.

### Role of cluster

AplusB's networks include all Austrian universities, technical colleges, research institutions, funding agencies and private companies. The programme recognises that connecting start-ups in the early phase of development with regional and national

networks and clusters ensures successful growth and market integration.

### **Evidence of success**

The programme has been successfully promoting innovative start-ups in high tech sectors (mechatronics, life science, creative industries, advanced materials, energy efficiency and green technologies) and in its objective of transferring research outcomes into business. About one-third of the companies hosted within one of the AplusB centres use a patent that was developed by a university, a technical college or a research institution. As of April 2018, 829 projects had been supervised; 710 of those projects resulted in the establishment of a company; over 3 000 high-quality jobs had been created in the newly formed companies. A specific

strength of the programme lies in offering tailor-made support for would-be researcher entrepreneurs, which combines the provisioning of facilities (office spaces and access to laboratories) with financial support and mentoring services.

### **Potential challenges**

- Planning and coordination between the national and regional levels;
- Coordinating with private initiatives, such as private incubators;
- Increasing the focus on high-end start-ups; and
- Improving the gender balance and facilitating more direct and comprehensive exchange among female-led start-ups at the national level.

## A.6 EXIST – University-Based Business Start-Ups



Geographical scope	Germany	Start/end date	1998- (the programme is currently in phase IV)
Industry	All industries	Focus	Strengthen the national innovation ecosystem by improving the synergies between universities, research institutions and industry and facilitating entrepreneurship
Programme website	<a href="https://www.exist.de/EN/Programme/About-EXIST/content.html">https://www.exist.de/EN/Programme/About-EXIST/content.html</a>	Contact information	Dr. Thomas Grossmann t.grossmann@fz-juelich.de

### Description

EXIST is an entrepreneurship support programme that pursues three objectives: i) establish a culture of entrepreneurship in university teaching, research and management; ii) support university-to-business technology transfer; and iii) increase the number of innovative business start-ups and create secure new jobs in the process. These objectives are reflected in the programme's components:

- **EXIST Culture of Entrepreneurship** supports universities in formulating and implementing a comprehensive and sustained university-wide strategy for increasing entrepreneurial culture and spirit. This is one of the oldest component programmes, as the main idea of EXIST is to support an entrepreneurship culture.
- **EXIST Business Start-up Grant** supports students, graduates and scientists in preparing innovative technology and knowledge-based start-up projects.
- **EXIST Transfer of Research** funds both the resource development necessary to prove the technical feasibility of research-based start-up ideas and to launch a business.

EXIST is implemented by the Federal Ministry of Economic Affairs and Energy. It is financed by the federal budget and is supported by the European Social Fund.

### Services provided

EXIST implements an innovative funding approach that integrates elements of technology, company and regional funding and at the same time focuses on networks to promote innovation. The programme both finances universities to promote the uptake of an entrepreneurial culture and the establishment of start-up friendly environments, and would-be entrepreneurs, to pursue their business projects. The following activities are supported for these two areas:

- **Universities or schools of applied sciences** receive funding mainly for the formulation and facilitation of a comprehensive strategy for promoting an entrepreneurial culture and mindset. The services include resources for creative spaces for ideas and experience exchange, innovation cafés and workshops, to train and engage coaches, and for lectures and/or new courses in entrepreneurship. The support is delivered through i) *EXIST-Culture of Entrepreneurship* and ii) *EXIST-Potentials*, which provides

- incentives to universities distinguishing themselves for the quality of their start-up environments.)
- **Entrepreneurs with start-up ideas** (from the development of a product or service to set-up a start-up), and/or **highly R&D- intensive projects** (from prototype development to successful market launch) also receive support. The funding they receive is channelled through universities and schools of applied sciences, which appoint the mentors who will support the beneficiary throughout the development of his/her project. Applicants can apply for two types of programmes: i) *EXIST Business Start-up Grant* (up to 1 year) and ii) *EXIST Transfer of Research* (up to 3 years).

### Role of cluster

When EXIST was launched, the priority was to encourage a collaborative culture within German regions by establishing structural linkages between universities and research institutions on the one hand and their regional entrepreneurial ecosystem on the other. Applications to the EXIST programme components can be made by universities alone or with partners, such as cluster organisations and research centres. There is no formal involvement of cluster organisations in the programme design or implementation. There are different ways in which cluster associations engage indirectly: i) they can cooperate with the university by providing mentors or being invited as speakers at special events, ii) by including the start-ups supported by EXIST within their network.

### Evidence of success

EXIST has been in place for over 20 years and has adapted its focus to different policy targets: from the promotion of an entrepreneurial culture to the setting up of measures that promote the creation and growth of new innovative companies. Nowadays, EXIST universities are present in all large cities across Germany, including Berlin, Frankfurt, Darmstadt, Hamburg, Halle, Munich and Stuttgart. The programme is appreciated because it offers a low-risk environment to would-be entrepreneurs (grant provision) while enabling their capacity to become entrepreneurs. The programme is closely integrated with a network of regional partnerships, including universities, industry, the financial sector, public and private institutions, infrastructure suppliers and business development agencies. It currently supports approximately 200-250 start-up projects per year in many different industries. Between 60-70 % of the spin-offs launched by the programme are still active and more than 75% of start-ups are still operating in the market beyond the critical point of 3-5 years.

### Potential challenges

- Internationalisation and scaling up of the start-ups supported, as around 71% of EXIST start-ups remain regional players;
- Reaching out to universities and future entrepreneurs in less developed and more peripheral regions, as most EXIST programmes are run in leading German cities; and
- Improving the exploitation of synergies and collaboration with SMEs.

## A.7 Genopole Cluster Entrepreneurship Support



Geographical scope	Ile de France (Paris, France)	Start/end date	2017_
Industry	Biotechnology, genomics and genetics applied to health and the environment	Focus	Entrepreneurship support programme in life sciences
Programme website	<a href="http://www.genopole.fr">www.genopole.fr</a>	Contact information	Jean-Marc Groonet Jean-Marc.Groonet@genopole.fr Anne Jouvenceau Anne.Jouvenceau@genopole.fr

### Description

Genopole is the oldest and largest biocluster in France. It was a pioneer during the biotechnology thrust of the late '90s and has since grown to become one of the leading European world-class biotech hotspots. Genopole is being highlighted in view of its 2025 strategy of a model focused on research and business development especially targeting start-ups. To this end, it has organised its service portfolio around four pillars, namely: Shaker, Booster, Growth Hub and Prospection. The main objective is to support the complete business entrepreneurship cycle.

### Services provided

The main services provided by Genopole to entrepreneurs are described below:

#### ***Shaker – Capture of innovative projects and creation of companies***

Mainly aimed at PhD students, postdocs and engineers, the Shaker service supports proof-of-concept experimentation. It offers access for six months (with an option for a second six months) to a fully equipped biotech laboratory, associated facilities and expert support to test the feasibility of biotech projects. It also features a seven-day entrepreneurship training programme. Up to

five participants are selected by independent experts every six months in accordance with the participant projects' degree of innovation and their willingness to integrate with the Genopole campus.

#### ***Booster – Incubation and development stimulation***

The service aims to support innovative biotech start-ups (less than two years old) with high potential for development and growth. It welcomes companies to the Genopole Campus for one year (with an option for a second year) and provides customised support to accelerate their growth, enhance their visibility and overall increase their chances of succeeding. Besides soft-landing services and access to cutting-edge high-tech platforms, the Booster service prepares an integral diagnosis of selected companies to design a tailored action plan, an advanced training programme specifically for biotech companies; direct support with fundraising; and mentoring by Genopole's business managers.

#### ***Growth Hub – reinforcement, growth and development***

The main objective of this service is to promote the development of companies with high growth potential towards small-cap

status. To achieve this, the service offers a number of measures and programmes, including funding facilities, recruitment services, and support to internationalisation and export activities.

### **Role of cluster**

The Genopole Cluster is responsible for the implementation and management of the entrepreneurship support measures.

### **Evidence of success**

Different achievements pointing to Genopole's success include the development of joint curricula programmes with the University of Evry Val d'Essonne and the cooperation with the IMT (Institut des Métiers et des Technologies) in opening a training facility at Genopole to prepare people for careers in biotech and drug bio-production. Genopole attracts both national and international companies. This is possible

because Genopole offers facilities to businesses and cooperation with professionals that provide additional benefits. The bio-cluster consists of 7 biotech companies, 17 academic research laboratories and 109 729 m<sup>2</sup> of real estate. Genopole companies have raised EUR 623 million in equity funding. Genopole has supported a total of 188 businesses since it started its activities.

### **Potential challenges**

- The programme involves a large number of diverse actors, including the regional and national government, a wide range of companies, research institutions, various universities and NGOs. Therefore, special attention has to be paid to communication and internal processes to ensure the quality and the efficiency of the collaborations.

## A.8 'Pre-Acceleration Point for Polish Start-ups' - South Poland Cleantech Cluster



Geographical scope	South Poland Region	Start/end date	2016-
Industry	Cleantech	Focus	Early-stage entrepreneurship, pre-acceleration
Programme website	<a href="http://spcleantech.com">http://spcleantech.com</a>	Contact information	Janusz Kahl <a href="mailto:j.kahl@spcleantech.com">j.kahl@spcleantech.com</a>

### Description

The South Poland Cleantech Cluster (SPCleantech cluster) is an example of successful territorial development through an integrated approach to the cooperation of different actors. Its primary objective is to build an entrepreneurial ecosystem in the southern region of Poland by fostering innovation, supporting the commercialisation of new technologies and promoting entrepreneurial spirit and activity. The SPCleantech cluster organisation contributes to the transformation of the regional economy by promoting entrepreneurship, supporting the creation of start-ups and facilitating access to risk capital for early-stage enterprises. It proposes a comprehensive approach to entrepreneurship in the areas of energy efficiency, the circular and bio-based economy and environmental sustainability that runs from promoting an entrepreneurial culture to providing customised business advisory services. SPCleantech runs a Pre-accelerator Point for Polish Start-ups, which is supported by KIC InnoEnergy (Knowledge and Innovation Community), the European company created by the European Institute of Technology (EIT) dedicated to promoting innovation, entrepreneurship and education in the sustainable energy field by bringing together academics, businesses and research institutes. The programme works in collaboration with experienced mentors from other cleantech clusters in Denmark, Finland and Sweden.

### Services provided

The Pre-Acceleration Point programme proposes a very comprehensive portfolio of services primarily focused on innovation and entrepreneurship.

- Acceleration and pre-acceleration services to start-ups, strengthening their business models, organising networking activities with mentors and expert teams (national and international) and providing access to different funding facilities.
- Innovation support in the field that enables access to test and demonstration installations in the region. Start-ups and other innovative companies can utilise these facilities to conduct R&D, build working prototypes and test existing products that are close to market.
- Curricula development carried out jointly with the universities and the different training institutions of the area. The cluster and its partners support training programmes for internships and suitable educational activities.

Other services provided by SPCleantech include matchmaking and B2B networking opportunities, coaching and mentoring, workshops and conferences.

## **Role of cluster**

The SPCleantech cluster, which engaged in benchmarking towards Cluster Management Excellence ("Bronze label"), is responsible for managing and providing its services in collaboration with its partners. SPCleantech cooperates with other targeted Cleantech clusters and R&D institutions. Its network is organised based on a 'quadruple helix' approach established by industry, research institutions, public/semi-state players and NGOs in the region.

## **Evidence of success**

The main success factors of the programme are the following.

- Having different business profiles among its partners, such as banks, ICT companies, training institutions and universities, allows the entire business community (start-ups, SMEs and large companies) to benefit from the different profiles and creates multi-sectoral projects taking advantage of the synergies established.
- The international approach of the programme, involving international

experts and foreign companies, provides a beneficial knowledge exchange for the participants and brings in new trends from other countries. This approach also provides international visibility, thereby increasing the attractiveness of the programme and the area.

## **Potential Challenges**

- There are cultural factors in the region that discourage entrepreneurship, such as fear of failure and risk aversion. The challenge is to develop a more entrepreneurial culture, starting with young people and through education.
- Working with local administrative agencies on simplifying requirements and procedures involved in setting up a business, as these have been identified as factors detrimental to entrepreneurship in the region and a barrier to the programme.
- A strong challenge is the lack of available funding. One major concern for the cluster is the capacity to attract new investors as the demand for funding outstrips supply.

## A.9 MedTech Accelerator



Geographical scope	Belgium	Start/end date	2016-
Industry	Medical technology (medtech)	Focus	Support and facilitate the development of medtech business activities
Programme website	<a href="http://www.medtech-accelerator.eu">www.medtech-accelerator.eu</a>	Contact information	Sophie Liénart <a href="mailto:sliénart@hub.brussels">sliénart@hub.brussels</a>

### Description

MedTech Accelerator is a Belgian programme developed by the lifetech.brussels cluster organisation to support innovative start-ups and scale-ups in the life science industry. The programme started as an initiative of the Brussels Region, but in 2018 was extended to the national level in order to capitalise on the expertise and infrastructure available in the different regional ecosystems of Belgium. The programme offers a combination of services that include mentoring, networking and specialised advisory services. Participants are selected through a competitive selection procedure and cover part of the cost of services. One key characteristic of the MedTech Accelerator programme is that it is defined as a fast accelerator for medical projects (four months), whether they involve software, hardware, services or a combination. The programme is co-financed by the European Regional Development Fund (ERDF).

### Services provided

During the four months of the MedTech Accelerator programme the selected start-ups benefit from the following services:

- practical workshops related to business management,
- lectures and discussions with MedTech and related experts,
- networking with different stakeholders, namely: possible investors, regulators,

representatives of the healthcare sector,

- knowledge exchange programmes between the different participants,
- mentoring programmes with experts on carrying out action plans and achieving objectives, and
- connection programmes with investors and potential partners.

### Role of cluster

The programme management, promotion and implementation is supported by lifetech.brussels, the Brussels health cluster. Since 2018, MedTech Flanders and MedTech Wallonia have also taken part in the programme. The programme's implementation relies upon a business ecosystem made up of public and private research centres, biotechnology, pharmaceutical, and medical equipment companies, patent attorneys and financial intermediaries.

### Evidence of success

The number of companies selected by the programme continues to increase year after year. In 2016 and 2017, approximately 10 projects participated in the programme. In the 2018 edition, a total of 16 projects were selected (five in Brussels, four in Flanders and seven in Wallonia). It is expected that a maximum of 20 projects will be selected for the 2020 edition. This is testimony to the

usefulness of the programme and of its capacity to attract MedTech start-ups.

period may be a challenge for achieving results

### Potential Challenges

- The programme may not attract enough projects in the future due to the requirements for applicants, including the fee for participating. This is both positive and negative for the programme. The positive aspect is that the programme receives applications from highly qualified projects which are the most likely to succeed. The negative is that the number of applications may be low.
- The programme's activities take place over a four-month period. The short

## A.10 Medical Valley Nuremberg



Geographical scope	Nuremberg, Bavaria (Germany)	Start/end date	2007-
Industry	Biotechnology, genomics and genetics applied to health and the environment	Focus	Support start-ups, spin-offs and SMEs in the healthcare sector
Programme website	<a href="http://en.medical-valley-emn.de">http://en.medical-valley-emn.de</a>	Contact information	Matthias Hiegl matthias.hiegl@medical-valley-emn.de Benjamin Stöcklein benjamin.stoecklein@medical-valley-emn.de

### Description

Medical Valley is one of the most successful start-up centres in Germany in the health sector based in Nuremberg. It has been operational since 2007 offering tailored services for international start-up companies, spin-offs and SMEs. The centre provides several services to start-ups, including comprehensive consulting services on funding. **Services provided**

The service portfolio supports innovation from the initial product idea to market maturity following the one-stop-shop principle. It includes research and co-working facilities, mentoring provided by experienced entrepreneurs within the cluster organisation network, training sessions (workshops, seminars and other formats) designed to acquire industry-specific knowledge, foster discussion and promote knowledge transfer, internationalisation support (outbound and inbound), and partnering meetings with potential associates and investors.

High value-added and industry-specific services offered to start-ups include:

- the Prospective Health Technology Assessment (ProHTA), an innovative

tool for strategic planning for medical products in an early stage,

- procurement guidelines for start-ups, identifying those that are more suitable and assisting in preparing bids,
- advice on the healthcare market, technology and patents, and
- support with regulatory compliance requirements.

### Role of cluster

Medical Valley is supported by the Federal Ministry of Economics and the Federal Ministry of Education and Research and is part of the German "go cluster" community of strong cluster organisations and was awarded a "Silver" label for Cluster Management Excellence. The activities that promote entrepreneurship are coordinated by the cluster management. However, each specific activity is carried out in the corresponding facilities of the different cluster partners, some of which are headquartered in the cluster area (e.g. Siemens Healthcare). In addition, a range of potential health sector stakeholders can be found locally, including universities, research centres, health equipment and marketing companies and hospitals, making health

innovation possible across the entire healthcare spectrum.

### **Evidence of success**

In 2017, Medical Valley, together with ZOLLHOF (a Tech Incubator in Nuremberg) were selected as Digital Health Hub Nuremberg/Erlangen by the Federal Ministry for Economic Affairs and Energy within the Digital Hub Initiative, which aims to establish regional ecosystems where cooperation between companies and start-ups boosts innovation and digital transformation on the Silicon Valley model. Its objective is to establish new structures, change processes and promote innovative business models through consistent and effective enforcement of digitisation in the healthcare field, using big data and artificial intelligence for the prevention and early detection of illnesses.

The European Metropolitan Region of Nuremberg (EMN), where Medical Valley is located, is the German region where medical technology is efficiently brought from idea to product and where emphasis is placed on the innovation steps among the value chain. The 35 new companies that were in the incubator and the remaining 70 companies that have benefited from the services of the Medical Valley EMN since its inception are examples of its success.

### **Potential Challenges**

- The main challenge for Medical Valley EMN is the diversity of stakeholders involved in the programme. This can lead to conflicts of interest affecting performance such as conflicts in dealing with the commercialisation of medicines or regarding the use of patents.

## A.11 Milwaukee 7



Geographical scope	Milwaukee (Wisconsin, USA)	Start/end date	2005-
Industry	Electronics, energy, power and controls, food and beverage, finance and insurance, consumer products, and medical, water and information technology	Focus	Promote regional cooperation and innovation, through talent and entrepreneurship, to boost economic growth
Programme website	<a href="http://www.mke7.com">www.mke7.com</a>	Contact information	Pat O'Brien pobrien@mke7.com milwaukee7@mmac.org

### Description

The Milwaukee 7 (M7) programme covers the Milwaukee metropolitan area, which is comprised of a higher amount of industrial activity when compared to other US metropolitan areas and the national average. M7 provides services that are effective in transitioning the local workforce from a labour-intensive industrial environment to a more capable workforce that meets the demands of a knowledge-based economy, with emphasis on regional cooperation.

On the one hand, M7 helps entrepreneurship through curricula development, providing access to funding facilities and business accelerators along with other supportive services. At the same time, the programme is helping more traditional companies by leveraging regional assets to catalyse growth, promote cluster activity and provide export and internationalisation facilities.

### Services provided

M7 offers a comprehensive portfolio of services to support business attraction and expansion, talent attraction and development, and entrepreneurship. For this purpose, M7 has several services and initiatives targeting the different stages of the entrepreneurial cycle:

- MiKE-Innovation – Focusing on the creation and support of relations between corporations, universities and colleges, creating the right environment for the development of an innovative workforce in the area.
- BizStarts – Supporting scalable start-ups, offering a one-stop centre for entrepreneurs.
- Scale Up Milwaukee – Helping companies to grow, designing strategies for high-growth, high-impact entrepreneurship.
- M7 Venture Capital Fund – Financing start-ups and scaling companies. The funding range is US \$ 50 000 - 125 000 (i.e. ca. € 45 000-112 000).
- Accelerators and Tech Transfer – Providing through different clusters specialised accelerators for entrepreneurship; while the Center for Technology Commercialisation assists early-stage emerging technology businesses.

### Role of cluster

The M7 strategy pivots around the regional industrial clusters, which are central drivers of Milwaukee's development. They serve as the basis for building a quadruple helix economy, where academia, research, government and industry create a dynamic ecosystem through

cooperation. Good examples of cluster involvement are the different accelerators:

- BREW Accelerator (Business, Research, Entrepreneurship in Water) funds water technology start-ups and is operated by The Water Council.
- FaB Wisconsin (the State Food and Beverage industry cluster organisation) offers a programme designed to build the capacity and capitalisation of the regional food and beverage companies.
- MWERC's (Mid-West Energy Research Consortium) focuses on fostering technology and business models in the sector by supporting companies through product and technology acceleration and path-to-market planning.

Moreover, clusters set a large part of market demand, absorb the workforce and attract other companies, while providing services, promoting innovation, favouring internationalisation, reinforcing the productive system, and supporting the diversification of activities and exploitation of resources.

### Evidence of success

Some of the achievements of M7 are the attraction of companies, the creation of a talent pipeline to meet the demands of the labour market, the advance of industry clusters, and the increase of exports. Through global trade ventures, the region's industry

clusters are becoming better known throughout the world and are developing stronger relationships as they connect companies with their counterparts overseas. M7 is also a magnet for foreign companies, which benefit from the programmes of trade facility, visas and cluster networking. (e.g. Foxconn-Taiwan, Haribo-DE, and Ingeteam-ES).

### Potential Challenges

- Milwaukee's economy was based on heavy industry as in other regions in what is known as the Rust Belt. As a result, it has experienced significant recent challenges, including growth stagnation, job losses and rising poverty. The major programme challenge is to strike a balance between promoting heavy industry along with a more knowledge-based economy.
- The socioeconomic situation of the region is putting pressure on the labour market, creating talent shortages, skills gaps and labour mismatches. The main challenge of the programme is to identify the employers' needs, determine the skills of the current workforce, establish the gap that may exist, and structure the programme to fill this gap. This can be quite challenging since employers' needs change quickly to adapt to changes in technology.

## A.12 scale ai – Innovation Supercluster for using Artificial Intelligence for Supply Chains and Logistics Excellence



Geographical scope	Montreal (Quebec, Canada)	Start/end date	2018-
Industry	Artificial Intelligence (AI) and Supply Chains (SC)	Focus	Develop intelligent SC by leveraging AI technologies
Programme website	<a href="https://aisupplychain.ca">https://aisupplychain.ca</a>	Contact information	Erica Boisvert <a href="mailto:erica.boisvert@optelgroup.com">erica.boisvert@optelgroup.com</a> Alain Dudoit <a href="mailto:alain.dudoit@armdintl.com">alain.dudoit@armdintl.com</a>

### Description

scale ai is one of five superclusters selected by the Government of Canada within its Innovation Superclusters Initiative (ISI) launched in 2017. This supercluster's unique aspect is that it works to build the next-generation supply chain based on the opportunities opened up by Artificial Intelligence (AI) technologies to leverage the value of the data generated by supply chains.

The programme for this investment and innovation hub aims to enable Canada to produce business value by responding to a range of industrial needs (e.g. demand forecasting, product customisation, sourcing, logistics, traceability, security), increasing efficiency, and boosting industry transformation and performance. Another interesting aspect of this cluster initiative is that it is led by business.

### Services provided

scale ai is building a technological roadmap to develop leading-edge solutions for business and accelerate AI adoption in supply chains. Through cooperation, the cluster helps design and execute high value-added industry-led collaborative projects between its partners. It also drives the scale-up of start-ups and SMEs

by enabling access to broader markets and is training leaders in the cutting-edge use of AI.

Focusing on supply chains and the impact of AI innovations, scale ai targets the four supply chains most exposed to AI impacts:

- consumer and retail,
- industrial goods and manufacturing,
- infrastructure and construction; and
- healthcare.

It also brings together AI and digital technology providers with supply chain solution providers to support these four sectors implement AI-powered solutions. It is important to note, however, that the technologies developed as part of scale ai are fully applicable and adaptable to business challenges faced by many other sectors.

### Role of clusters

scale ai is headquartered in Montreal, Canada. Its core operating region is the corridor between Quebec City and Waterloo, given that the area offers a competitive and attractive gateway for international trade. The region accounts for half the population of Canada and approximately 60 per cent of Canada's exports and gross domestic product. scale ai acts as an interface between the different stakeholders, including top-end technology

firms such as Intel or Cisco, academia (e.g. University of Toronto, University of Waterloo) and other institutions. It thus has a holistic strategy to exploit the strengths and resources available in the local ecosystems and promotes the cooperation to develop intelligent supply chains.

### **Evidence of success**

scale ai has been selected as one of the five successful business-led innovation superclusters to receive federal funding. As of end of 2018, 118 companies, academic institution, government partners, venture capital firms, and other institutions have joined forces to support the programme. The programme is in its inception and therefore has not yet produced tangible outcomes.

### **Potential challenges**

- The cluster's desire to address all stages of the supply chain is quite an ambitious objective, which creates a challenge in focusing on the specific needs of each stage.
- The AI sector is evolving quickly and many of its applications are still experimental.
- The different level of modernisation and digitisation in each target sector makes it challenging to establish strategies that are effective across all sectors.

# Annex B - Initial short-list of programmes supporting start-ups and scale-ups

Nr.	Project Title	Focus	Country	Geographical focus	Sectoral coverage	Cluster relevance
1	APlusB	Start-ups (2002-2016); Scale-ups (since 2017)	Austria	National	Mechtronics, life science, creative industries, advanced materials, energy efficiency and green technologies	Medium
2	CATCH Charleroi*	SMEs, large enterprises	Belgium	Regional	Advanced Manufacturing; Airport & Logistics; Creative & Digital; Health & Bio	Strong
3	GreenLab.Brussels*	Start-ups, scale ups	Belgium	Regional	Green economy	Strong
4	Med Tech Accelerator*	Scale-ups	Belgium	Regional	Medical-tech sector	Strong
5	scale ai	Start-ups, scale-up	Canada	National	AI supply chains	Strong
6	Innovation cluster	Would-be-entrepreneurs; start-ups, scaling-up	Canada	Regional	Cleantech, agrotech, healthcare and digital sectors	Strong
7	Scale-Up Denmark	Scale-ups	Denmark	National	Experience economy & Tourism; Offshore Industry; Energy Efficient Technologies; Food; Health & Welfare Technology; Bio Economy & Industrial Symbiosis; Life Science; ICT; Smart Industry; Cleantech; Maritime Industry; Robotics	Medium
8	DEMOLA	Would-be-entrepreneurs, start-ups	Finland	National	Multi-sector	Weak
9	Young Innovative Company funding	Scale ups	Finland	National	Multi-sector	Weak
10	BIC Sud France	Start-ups	France	Regional	Space-related technology	Strong

Nr.	Project Title	Focus	Country	Geographical focus	Sectoral coverage	Cluster relevance
11	Cap Digital	SMEs, Scale-ups	France	National	ICT	Strong
12	EuraTechnologies*	Start-ups and scale ups	France	National	Digital, Data, IoT, Cybersecurity	Medium
13	Genopole Cluster Entrepreneurship Support Services	Would-be-entrepreneurs, start-ups	France	Regional	Automotive industry	Strong
14	Pole SCS	Start-ups, scale-ups	France	National	Multi-sector	Strong
15	EXIST	Would-be-entrepreneurs, start-ups, scale-ups	Germany	National	Multi-sector	Medium
16	Medical Valley EMN	Start-ups	Germany	Regional	Health care sector	Strong
17	Alimenta2Talent project	Start-ups	Italy	Regional	Agri-food sector	Strong
18	Bioindustry Park Silvano Fumero*	SMEs, scale-ups	Italy	Regional	Life-science and health	Strong
19	Incubatore Imprese Innovative del Politecnico di Torino*	Would-be-entrepreneurs, start-ups	Italy	Regional	Multi-sector	Medium
20	Innovami	SMEs	Italy	Regional	Mechatronics and automotive engineering, environment and energy, smart cities and communities, industrial automation, agribusiness, biomedical	Medium
21	PoliHub	Would-be-entrepreneurs, start-ups, scale-ups	Italy	Regional	Multi-sector	Strong
22	Welcome Pack	Would-be-entrepreneurs, start-ups, scale-ups	Latvia	National	Multi-sector	Weak
23	ZorgInC	Start-ups	Netherlands	National	Digital health sector	Medium
24	Redmedtech Ventures	Start-ups	Netherlands	Regional	Life science and health sector	Strong
25	Akcelerator	Scale-ups	Poland	Regional	Biotechnologies	Strong
26	South Poland Cleantech Cluster	Start-ups	Poland	Regional	Clean technologies, circular economy	Strong

Nr.	Project Title	Focus	Country	Geographical focus	Sectoral coverage	Cluster relevance
27	Start Up Voucher	Start-ups	Portugal	Regional	Multi-sector	Weak
28	StartUp Porto Accelerator	Scale-ups	Portugal	Regional	Multi-sector	Weak
29	Rublk	Would-be-entrepreneurs	Romania	Regional	Multi-sector	Weak
30	Start Up Romania	Start-ups	Romania	National	Multi-sector	Weak
31	Cluster mobilier Transylvania	Scale-ups, SMEs	Romania	Regional	Furniture	Strong
32	Open Innovation 4.0	SMEs	Spain	Regional	Multi-sector	Medium
33	Business Factory Auto (BFA)	SMEs, scale-ups	Spain	Regional	Automotive industry	Strong
34	Bioeconomy region*	Would-be-entrepreneurs-start-ups and scale-ups	Sweden-Norway	Regional	Bioeconomy	Medium
35	Start Up Loans	Start-ups	UK	National	Multi-sector	Weak
36	Milwaukee 7	Start-ups, scale-ups, incubation, acceleration	USA	Regional	Electronics manufacturing, energy, power & controls, food & beverage manufacturing, water technologies, manufacturing, finance & insurance, medical technology, IT and consumer products.	Strong

\*Pilot action region: Short-listed programme/projects based in one of the 12 EU regions involved in the Pilot Action for regions in industrial transition.

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# European Observatory for Clusters and Industrial Change

The European Observatory for Clusters and Industrial Change (#EOCIC) is an initiative of the European Commission's Internal Market, Industry, Entrepreneurship and SMEs Directorate-General. The Observatory provides a single access point for statistical information, analysis and mapping of clusters and cluster policy in Europe, aimed at European, national, regional and local policy-makers, as well as cluster managers and representatives of SME intermediaries.



The aim of the Observatory is to help Europe's regions and countries design better and more evidence-based cluster policies and initiatives that help countries participating in the COSME programme to:

- develop world-class clusters with competitive industrial value chains that cut across sectors;
- support Industrial modernisation;
- foster Entrepreneurship in emerging industries with growth potential;
- improve SMEs' access to clusters and internationalisation activities; and
- enable more strategic inter-regional collaboration and investments in the implementation of smart specialisation strategies.

In order to address these goals, the Observatory provides an Europe-wide comparative cluster mapping with sectoral and cross-sectoral statistical analysis of the geographical concentration of economic activities and performance, made available on the website of the European Cluster Collaboration Platform (ECCP)<sup>64</sup>. The Observatory provides the following services:

- **Bi-annual "European Panorama of Clusters and Industrial Change"** that analyses cluster strengths and development trends across 51 cluster sectors and 10 emerging industries, and investigates the linkages between clusters and industrial change, entrepreneurship, growth, innovation, internationalisation and economic development;
- **"Cluster and Industrial Transformation Trends Report"** which investigates the transformation of clusters, new specialisation patterns and emerging industries;
- **Cluster policy mapping** in European countries and regions as well as in selected non-European countries;
- **"Regional Eco-system Scoreboard for Clusters and Industrial Change"** that identifies and captures favourable framework conditions for industrial change, innovation, entrepreneurship and cluster development;
- **Updated European Service Innovation Scoreboard**<sup>65</sup>, that provides scorecards on service innovation for European regions;

<sup>64</sup> <https://www.clustercollaboration.eu/>

<sup>65</sup> Previous versions for 2014 and 2015 were developed by the European Service Innovation Centre (ESIC), see [http://ec.europa.eu/growth/tools-databases/esic/index\\_en.htm](http://ec.europa.eu/growth/tools-databases/esic/index_en.htm)

- "**European Stress Test for Cluster Policy**", including a self-assessment tool targeted at cross-sectoral collaboration, innovation and entrepreneurship with a view to boosting industrial change;
- **Customised advisory support services** to twelve selected model demonstrator regions, including expert analysis, regional survey and benchmarking report, peer-review meeting, and policy briefings in support of industrial modernisation;
- **Advisory support service to European Strategic Cluster Partnerships**, in order to support networking between the partnerships and to support exchanges of successful practices for cross-regional collaborations and joint innovation investments;
- **Smart Guides** for cluster policy monitoring and evaluation, and for entrepreneurship support through clusters that provide guidance for policy-makers; and
- **Brings together Europe's cluster policy-makers and stakeholders** at four European Cluster Policy Forum events, the EU Cluster Weeks, and at the European Cluster Conference In order to facilitate high-level cluster policy dialogues, exchanges with experts and mutual cluster policy learning. Four European Cluster Policy Forums took place in February, April, November 2018 and March 2019 in Brussels. The European Cluster Conference took place from 14 to 16 May 2019 in Bucharest (Romania) with support of the Romanian Presidency to the EU.
- Online presentations and publications, discussion papers, newsletters, videos and further promotional material accompany and support information exchanges and policy learning on cluster development, cluster policies and industrial change.

More information about the European Observatory for Clusters and Industrial Change is available at:  
<https://www.clustercollaboration.eu/eu-initiatives/european-cluster-observatory>

European Commission

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