



Connecting with the Entrepreneurial Ecosystem

TTO Circle Workshop Report

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EXECUTIVE SUMMARY

The ability of technology-based ventures to form solid teams is essential to achieve a growth trajectory and to successfully commercialise new inventions and scientific knowledge. Moreover, having a well-rounded team is critical to attract smart capital in the early stages of the ventures. Nevertheless, many technology-based ventures, and also spin-off companies of Research and Technology Organisations (RTO) struggle to attract managerial profiles to complement the scientific skills that reside in the team.

This report summarises earlier evidence in the literature and the insights gathered in the workshop 'Connecting with the Entrepreneurial Ecosystem' organised by the TTO Circle on 24 October 2019 related to participants' experiences and best practices in connecting scientific minds with managerial profiles.

While there is plenty of academic and grey literature exploring the process of entrepreneurial team formation, technology-based ventures have a few characteristics that make the process of building solid teams more complex and much less known.

These difficulties and learning from the micro-level perspective, that is, from the team and its members' perspectives, include the following considerations.

In general, scientists or researchers do not have the required skills and mind-set to transition successfully into a CEO. This implies that, in most cases, managerial profiles need to be recruited externally to fill this role.

- Researchers' mindsets and skills, and even on many occasions their career goals, may hinder the potential of the invention to successfully meet market demands. In addition, this is accentuated when researchers have a limited network of contacts in the industry.
- Beyond the skills and experience that the CEO could contribute to complement those existing in the team, ideally his or her vision and personality must also fit within the existing team. This requirement, more subtle than ensuring the right complementarity in terms of skills or experience, requires more time for the team to adapt to its new configuration as well as careful observation to identify negative dynamics or tensions.
- Newly hired employees must demonstrate full commitment to the new company and must be aligned with the objective of creating value with the company. Articulating the incentive schemes to recruit and retain external CEOs may be challenging though, because ideation has not come from the CEO, and he/she might not be willing to put either money or sweat equity in the venture.
- Designing compensation packages based on equity instead of high salaries for incoming CEOs may be useful. Further evidence is needed to understand which concrete incentive schemes, for example in terms of vesting shares and stock options, are most appropriate.

The source of potential CEOs can be quite diverse, from business school alumni to former entrepreneurs and industry experts.

- Activities to enhance the overall visibility of RTOs could be useful in making the available jobs more attractive and spreading the word on vacancies to qualified managerial profiles. Word of mouth has proven to be a very effective mechanism in recruiting qualified candidates.

- Building bridges with students from business schools could open the doors to larger groups of potential candidates; however, in many cases, study programmes that involve students in new ventures result merely in training programmes instead of long-term collaborations that last beyond the timespan of the programme.
- Venture Builders use some strategies that may be of value if RTOs replicated them, which include among others: bringing in a CEO at post-seed stage and before giving him/her the role as mentor, using in-house talent to temporarily lead the company during the early stages, recruiting external entrepreneurs only when venture's market traction facilitates the attraction of highly qualified talent, or allowing potential CEOs to work with several ventures to find a right match.

Beyond team level dynamics, **establishing an agenda for all stakeholders in the ecosystem could help mitigate the difficulty of matching technology-based ventures with entrepreneurs**. In this regard, a number of recommendations were considered (Box 1).

Box 1. Recommendations

1. The entrepreneurial ecosystem needs to be nurtured to favour greater connectivity across all players, avoiding organisations to invest efforts in creating their ecosystem internally.
2. At the European level, greater connectivity of the local ecosystems is needed to promote truly European teams with global mind-sets.
3. Fostering stakeholder connectivity within the ecosystem requires efforts to explore where the strongest and weakest connections and the most active nodes are. For that purpose, institutions should be encouraged to map their own network and to assess the networks jointly.
4. Providing the right training and incentives to scientists is essential in stimulating their willingness to connect with other actors in the ecosystem beyond the research community. Similarly, universities and business schools should equip students with entrepreneurial skills to lead their own ventures or those initiated by others.

1. INTRODUCTION

The TTO Circle organised a workshop ‘Connecting with the Entrepreneurial Ecosystem’, which took place in Brussels on 24 October 2019. The workshop dealt with the challenges connected to establishing spin-off companies in RTOs: Complementing spin-offs’ technological/scientific existing talent with CEO and sales profiles interested in growing SMEs. Having well-rounded teams made up of ‘minds’ and ‘management’ is a necessary condition to entice smart capital into investing in these opportunities.

The lack of evidence for an adequate formula to systematise this process of connecting with entrepreneurs might hinder the future success of deep-tech spin-offs. Finding a connection with entrepreneurs involves complex issues concerning venture building, incentive setting, etc. The workshop, thus, aimed to stimulate discussions around the challenges and opportunities (Box 2).

The workshop gathered participants from different backgrounds, such as technology transfer officers, policymakers, venture builders, and other players within the entrepreneurial ecosystem engaged in connecting entrepreneurial teams, who shared their experiences and best practices. Presentations of participants and further details of the workshop are available online¹.

The report highlights the main insights from the workshop related to the matching of ‘minds’ and ‘management’.

First, from the micro perspective, it discusses the issues around the formation of venture teams and the incentive setting for forming teams that can launch spin-offs. Second, from the macro perspective, it analyses the role of the different agents in the ecosystem in fostering interactions and connections between minds and management. These conclusions aim to fit within a broader policy debate on how to facilitate the formation of scale-up ventures in Europe. In fact, discussions about a lack of financing, particularly for early-stage ventures, point to the discouragement of investors due to the lack of solid and well-rounded teams. Thus, this issue of connecting with entrepreneurial talent is also linked to the more general financing issue.

BOX 2. TTO workshop objectives

1. Identification and exchange of best practices
2. Connecting with sources of potential management profiles required for deep-tech spin-offs
3. Incorporation of the issue of ‘minds’ connecting with ‘management’ into the European Commission’s programmes and financial instruments
4. Highlighting deep-tech spin-offs as a potential destination of choice for entrepreneurs

2. ENTREPRENEURIAL TEAMS

2.1 Traditional view on how teams are formed

Much of the existing literature about the formation of entrepreneurial teams takes the 'stages' approach, which assumes that organisations develop following a sequence of two main stages or occurrences² (Figure 1).

The first stage refers to the idea identification, during which an individual or a group identifies an opportunity to exploit and decides what is needed to develop the idea further.

At the implementation stage, the limited resources motivate the search for partners who could provide additional resources to the venture. Once this is determined, the original founders decide *where* to search for the new partners, *which criteria* to use to select them and *how to convince* them to join the venture.

These decisions, which are afterwards complemented with the measures to facilitate cohesiveness and sustainability of the entrepreneurial teams, determine the composition of the entrepreneurial teams, and subsequently, the growth and success probabilities of the venture.

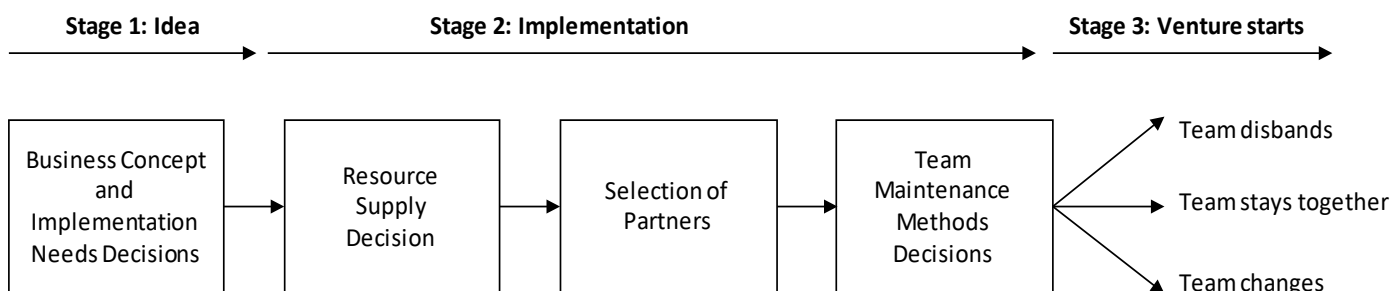


Figure 1: Stage model for entrepreneurial team formation

Source: Adapted from Kamm and Nurick (1993)

However, stage-based models have been criticised for their limited utility in describing other trajectories, which do not necessarily cover all the stages or follow that same sequence. In the specific case of deep-tech spin-offs or technology-based entrepreneurs, the decision to recruit a partner with managerial skills may arise after years of commitment by the founders/researchers in the development of the core component of the business opportunity, and sometimes, even after some researchers who were active in the early stages have left. More critically, the decision to recruit an additional partner is more likely to be motivated by the need to complement existing abilities in the team, and in many cases, by

the need to incorporate managerial and commercial skills that could otherwise limit access to external capital sources. Therefore, this leads us to a first concern about the conviction of the founding team about the real need to bring in a managerial partner, especially when this is a decision driven by financial needs. Indeed, the literature on founder-CEO succession suggests that most successions are involuntary, and only in few cases the founder-CEO proactively requests and supports a change to strengthen the venture³. This suggests that the inducement mechanisms that need to be offered to attract talent need to be carefully designed to avoid internal tensions.

2.2 Entrepreneurial team: characteristics and performance

Numerous studies assess whether and how new venture performance is driven by the characteristics of entrepreneurial teams, yet the evidence reveals conflicting results⁴. The characteristics, as suggested above (2.1), are the result of the places where partners are sought and the criteria used to recruit them.

The two main opposing theoretical presumptions are heterogeneity and homogeneity (Box 3).

According to the first view, heterogeneity in entrepreneurial team composition may help new ventures to equip the team with a stronger basis to successfully undertake a wider and more diverse range of activities. In the case of deep-tech spin-offs, given the functional specialisation of the founders, this vision provides the rationale for the founding team to join a partner with a greater managerial experience to achieve high growth⁵.

Another stream of research highlights the benefits of homophily, i.e. combining members with similar characteristics. It is argued that homophily leads to a higher level of interpersonal understanding and cohesion within the entrepreneurial team, which may help to minimise the emergence of conflicts⁶ and therefore, reduce the risk of failure due to dysfunctional dynamics.

But what does the empirical evidence suggest about the link between entrepreneurial team characteristics and performance? A recent meta-analysis⁷ of earlier studies revealed a robust direct relationship with

heterogeneity. That means that a more diverse pool of skills and mind-sets is necessary when new ventures are confronted with unexpected problems rather than routine problems.

When analysing the influence of industrial contexts, high-tech industries do not seem to enhance neither the value of aggregate entrepreneurial team characteristics nor the heterogeneity of the teams, when comparing them to low-tech industries. The finding could be attributed to the value of the relevance of knowledge; that is, in high-tech industries newer knowledge, even when combined with fewer years of experience, may be more valuable than older knowledge.

Nevertheless, some level of homogeneity among members, in the form of cognitive closeness and understanding, is needed to stimulate a more effective knowledge sharing in the team. This may come in the form of technical background or expertise shared by the founders and members recruited for managing the team⁸.

Another central aspect for technology entrepreneurs, beyond the heterogeneity of human capital, is the shortage of social capital within the team. Researchers are typically better linked to research communities than to commercial or industrial communities. Numerous initiatives have been implemented in Europe to create network bridges between researchers and commercial networks. For example, the UK Government acts as a connector to build partnerships between UK-based businesses, academics, research organisations, and qualified graduates within the Knowledge Transfer Partnership (KTP) programme⁹ which operates countrywide.

BOX 3. Heterogeneity and homogeneity in entrepreneurial team composition

HETEROGENEITY

It can imply different configurations depending on the characteristics. Literature has focused mainly on the following characteristics:

Demographics: age, social background, sex
Formal education: level of education, major
Work experience: functional roles, skills, tenure, work experience, industry

HOMOPHILY

It is understood to arise as a result of individuals' preferences to associate with similar others, particularly based on ascriptive characteristics such as age, gender, or ethnicity¹¹. Many entrepreneurial teams consist of friends, relatives, or former colleagues¹² who come from existing relationships and, therefore, share similar traits, attitudes, and values.

2.3 The CEO role in technology-based ventures

A particular challenge in the composition of a deep-tech or technology-based venture team relates to the selection of a CEO. While some researchers may take that role in early stages of the venture, turning the original researchers or founders into CEOs might pose critical challenges to the performance of the venture (Box 4).

While not many researchers are willing to take on the role of CEO, equipping the team from the start with a clear vision of what the role of CEO implies can be useful to avoid future conflicts. Coaching sessions to assess the skills, personality, and optimal roles of team members may be useful.

When the inventor assumes a role that does not correspond to the CEO (for example, when he/she becomes CTO), giving him/her a critical role in the design of the work plan could help keep them involved and aligned with the objective of creating value for the company. However, this should be done carefully to minimise the potential impact of the emotional link inventors tend to have to their invention, which can affect their objectivity in decision-making.

2.4 Incentive setting in entrepreneurial teams of technology-based start-ups

Articulating the incentive schemes to recruit and retain external CEOs poses significant challenges for technology-based ventures, given that typically, ideation has not come from the CEO and he/she might not be willing to put either money or sweat equity in the venture. Examples of mitigating the issues around attraction and retention of external CEOs include the following:

- **Providing a compensation package** that is a mix of essential salary and equity ownership for incoming CEOs. This helps to align incentives around value creation and to attract the right CEO profiles.
- **Bringing in a CEO as a mentor and chairperson** (part-time) initially, who could work in several start-ups in parallel, and then turn him/her into CEO in the right venture.

BOX 4. Challenges of founders as CEOs

- Differences in the mind-set between academia and practice. Most researchers lack business ambition and vision. In this sense, researchers, and consequently ventures, might be subject to strong inertia forces imprinted by the norms and working habits in academia/research.
- Conflicting priorities between publishing and developing the invention via a venture. Researchers may encounter tensions between the pressure to publish to succeed in their academic career, which implies bringing greater publicity to the invention through publications, and the confidentiality and secrecy needed when developing a venture around the invention.
- Differences in the required skillsets for doing research and leading a business venture. Researchers' limited private sector experience may hinder their ability to understand the cost and value of their inventions and may lead them to develop products that the market does not demand. Moreover, they typically lack managerial and leadership skills to steer the venture toward a growth path.
- **Recruiting a CEO once a high-profile company becomes a customer.** Otherwise, the venture may not be able to attract qualified profiles to lead the start-up.

Nevertheless, the precise incentive schemes that work best in this context, in terms of vesting shares and stock options, for example, remain to be elucidated in further research.

The team formation process does not conclude at the hiring stage; diversity and complementarity of skills need to be combined with positive team interactions. Earlier works have shown the positive relationship between team cohesion and trust in triggering creativity and decision-making quality¹⁰. This is associated with the idea that the best CVs are not always the best match for the team. Most organisations agree that sufficient time and resources should be invested to ensure that positive dynamics arise within a team over time, and for this, for example, organising team-building and coaching activities can be useful.

3. ENTREPRENEURIAL ECOSYSTEMS

3.1 Defining entrepreneurial ecosystems

Policymakers and academics have been long interested in understanding how the business environment promotes the emergence of high-growth ventures. The entrepreneurial ecosystem approach has only recently gained traction¹³, particularly in policy circles. Widely varying definitions of entrepreneurial ecosystems have emerged, but in essence, all emphasise the role of the social context in shaping entrepreneurial activity. For example, the entrepreneurial ecosystem concept is defined by Stam (2015)¹⁴ as “a set of interdependent actors and factors coordinated in such a way that they enable productive entrepreneurship”(p. 1765).

Compared to earlier concepts and approaches, such as clusters, innovation systems or learning regions, the focus here is on the individual entrepreneur, instead of the venture, and the entrepreneur is also considered a stakeholder of the ecosystem, rather than seen as the outcome of the system.

Finally, the entrepreneurial ecosystem approach focuses on growth-oriented entrepreneurship, based on the evidence that high-growth entrepreneurs are the main drivers of innovation, productivity and

employment. Although certain environments can be conducive to high rates of entrepreneurial activity, this does not necessarily imply higher rates of high-growth ventures¹⁵. High-growth ventures require specific resources and actors that differ from those needed to create small-scale ventures and self-employment activity. Indeed, most interventions enhancing framework conditions or general start-up policies have proved ineffective in increasing the number of high-growth ventures¹⁶.

3.2 The role of policy in supporting entrepreneurial ecosystems

Entrepreneurial ecosystems are based on pre-existing assets and conditions that are specific to each environment and make each ecosystem unique. Thus, implementing general approaches or policy solutions leads to ineffective outcomes. Policies should focus on complementing existing social and cultural attributes¹⁷.

Better understanding of the aspects that policymakers can target enables to design holistic policy measures to promote the creation and growth of new ventures (Table 1):

Approaches to policy	Description
Entrepreneurial actors within ecosystems	Provision of support and advice through mentorship or incubation programmes
Entrepreneurial resource providers within ecosystems	Enhancing access to finance (equity and/or loans) and relational resources
Entrepreneurial orientation with ecosystems	Shaping attitudes towards entrepreneurship and fostering entrepreneurship education programmes
Entrepreneurial connectors within ecosystems	Facilitating connections among the actors through communities of practice or entrepreneurial networks

Table 1: A taxonomy of approaches to target entrepreneurial ecosystems

Source: Mason and Brown (2014)

Regarding the central issue of the process of matching technology-based start-ups and managerial/commercial talent, the approach of supporting entrepreneurial connectors within ecosystems is presumably the one with the highest potential to facilitate the process.

These connecting programmes can take different forms and include one or several types of actors. For instance, a social networking and business support organisation CONNECT¹⁸ in San Diego, California aims to help technology and life sciences companies by working together with entrepreneurs, investors, and policymakers, and facilitates their connections and access to resources. The social network part of the intervention proved to be mutually beneficial for members in the community to help move research from the laboratory to the industry¹⁹. In a similar vein, Entrepreneurial Scotland²⁰ seeks to build an informal community of peer members to reduce the barriers to information and share advice and encouragement within the community.

Conversely, some programmes only allow leading organisations to participate. This is the case of the Future-Fifty programme²¹ in the UK, funded by the Department for Business Innovation and Skills. The programme links 50 most successful tech companies in the country with other top entrepreneurial companies (including programme alumni) and government officials to get expert guidance on leading a venture toward a growth path.

Overall, the evidence reveals that a few nodes account for a large part of the network activity and connect the rest of the actors in the ecosystem. This has been a clear case for example in Buenos Aires²². Despite the challenging socio-economic environment, in 15 years a prosperous entrepreneurial ecosystem has emerged. In this process, a few high impact entrepreneurs coming from Patagon (sold to Banco Santander), MercadoLibre (sold to eBay) and Digital Ventures (sold to Fox Entertainment) have been critical in building a solid foundation for the ecosystem and creating network bridges between entrepreneurs and other actors. These entrepreneurs are connected to 80 percent of the participants in the network.

3.3 European experiences in facilitating connectivity. Examples

TTO Circle members shared concrete actions that they are undertaking to connect actors within the entrepreneurial ecosystem (Box 5 and Box 6).

At a broader entrepreneurial ecosystem level, other players have also been successful in improving the connectivity of the agents within the ecosystem. For example, Startup Spain has been connecting researchers, entrepreneurs, investors, and traditional enterprises through a global platform since 2012. Its main event, South Summit attracts great attention every year and 3,000+ applicants participate in its start-up competition.

Universities also play a critical role in connecting actors and particularly, in bringing forth the knowledge that otherwise will not be commercialised. Despite a growing number of STEM students, not all of them can and want to stay in academia. Entrepreneurship offers an alternative, but it comes with a demanding agenda and may not be a good fit for everyone. For example, the Bettany Centre for Entrepreneurship (Cranfield School of Management) organises Enterprise Tuesday to introduce entrepreneurship as an alternative career path to the research community. It offers a series of lectures open to the university and business community to answer questions such as ‘What is entrepreneurship and is it for me?’ and ‘I want to start something. Where do I go?’.

Capacity building is also seen as an essential aspect while students are still in academia. This is in line with the insights recently shared by the League of European Research Universities²³ in terms of envisioning the role of research-intensive universities as a training ground to equip students with the entrepreneurial skills and attitudes to meet tomorrow’s demands of business and society. This involves making entrepreneurial training accessible and relevant to all students and articulating the learning experience around projects and interdisciplinary teams.

Finally, also at the university level, the strengthening of TTOs could be a way to commercialise a more significant part of the knowledge created within institutional boundaries.

According to the views of the different agents in the ecosystem, fostering dynamism in the ecosystem is essential but requires efforts and coordination of the actors, namely to:

- Understand every actor as part of the ecosystem instead of aiming to create an isolated and self-contained ecosystem within a single organisation. In the specific case of universities and research organisations, connecting with alumni may be critical to open institutional boundaries and build ties with external networks.
- Reflect on where the existing connections are and how to improve the connectivity of actors (individuals, organisations and institutions).

For that purpose, encourage institutions to map their own network in a way that allows joint exploration of where the most active relationships and nodes are and what connections need to be built and strengthened.

- Transform traditional companies into new agile organisations and connect them with new entrants to foster innovation.
- Embed the particular characteristics of each ecosystem, including their history and structure.
- Improve the connectivity of local ecosystems at the European level to promote truly European teams with global mind-sets.

Box 5. Actions to connect research teams and managerial talent

Building bridges with business schools (Tecnalia, CEA, Fraunhofer Venture, CERN)

Several organisations build relationships with leading business schools to identify potential entrepreneurial profiles. Most organisations warn, however, that these programmes have mainly cultural and learning objectives instead of high expectations to identify mature CEOs.

Speed dating events (Tecnalia)

These events specifically aim to connect management profiles with technological spin-off projects to transform them into high impact SMEs. Participants can pitch for talent (instead of money) to complete their teams and find, for instance, CEOs and CTOs.

Boot camps (Fraunhofer Venture)

25-30 people participate per boot camp. During the first phase, team members' ambition, personality, strengths and weaknesses are explored, as well as their motivations for participating in the boot camp. In a second phase, the Ventures Lab explores together with the teams what profiles are missing and recruits team members based on these needs through, for instance, matching workshop events, business schools, business associations or LinkedIn searches. Required profiles must demonstrate full commitment for making a spin-off and becoming an entrepreneur, commitment to investing time, resources and private money and an entrepreneurial personality to develop a business that is high-tech and business-to-business proof as well as driven by impact and not purely by money.

Alumni groups (CERN)

CERN Alumni was created to involve previous staff members in entrepreneurship. To find role models for staff members, successful entrepreneurs are regularly invited, and LinkedIn live events are created.

Box 6. Actions to improve the visibility of technology-based ventures and research activities

Entrepreneurship Club (Tecnalia)

Founded in 2014, it aims to increase the visibility of Tecnalia in the local entrepreneurial ecosystem. Members include, among others, Tecnalia employees (to nurture entrepreneurial culture in the organisation), other research organisations, students and entrepreneurs, who are invited to interact in informal networking events, leadership series, coaching sessions, and speed dating events. The launch of the Entrepreneurs' Club resulted in a strong word of mouth that permitted some qualified managerial profiles to get to know Tecnalia and join several ventures as CEOs.

Talent for Ventures (Tecnalia)

In collaboration with the regional government (Basque Government), this pilot project encourages Tecnalia Ventures and Mondragon University to develop a pilot in order to tackle the matching of minds and management problem. In the current format, it provides students a flavour of how to create a start-up and in the future, it will target more experienced management profiles.

Lille ecosystem (CEA)

A lab is run close to critical incubators/accelerators in France to promote technologies developed in the RTO to entrepreneurs. This lab provides a showroom in order to imagine the use of the technologies and its potential and organises networking events to connect with entrepreneurs.

Entrepreneurship Student Programme (CERN)

It comprises a 5-week CERN entrepreneurship programme where students pick a technology and talk with experts. This event trains students and gives them an entrepreneurial skillset rather than creating actual start-ups. They also organise a screening week with the Norwegian University of Science and Technology (NTNU) during which entrepreneurship students from NTNU identify technologies from CERN with the potential to be developed into applications and then spend a semester building applications.

4. THE CASE OF VENTURE BUILDERS

The venture builder model (also known as startup studio or startup factory) has proven to be successful in connecting tangible resources and people in a unique cost-efficient manner. The number of venture builders has recently increased across the world, and particularly in Europe, which accounted for half of them in 2015²⁴. These include, among others, Rocket Internet (Germany), LeStudioVC (France), Efounders (France), Antai (Spain), HighTechXL (The Netherlands), or NLC (The Netherlands). The activities of the venture builders represented at the workshop are described in Box 7.

Venture builders systematically create new ventures through the advantage of sharing internal resources (financial, operational and talent) when they develop several ventures simultaneously. Compared to accelerators or incubators, they do not attract entrepreneurs with ideas. In pure venture builders business ideas are developed in-house and then combined with internal talent or executives who connect with external management teams only once the idea has incubated. Therefore, attracting a good pool of talent and providing the right human resources to ventures is at the core of their activities.

Box 7. Examples of venture builders

Frontier IP

Location: Cambridge, Edinburgh and London (UK)

Frontier IP develops and manages a portfolio of equity stakes and license income from companies founded on strong, commercially-focused IP. The Frontier IP team works with a range of universities to identify strong IP and helps them create and grow companies based on this IP.

Frontier IP provides the scientific teams with active hands-on support thanks to the internal industry and managerial expert team. External managerial profiles are only hired once the venture gains traction or raises the interest of renowned customers. The portfolio includes ventures in various sectors, such as energy, materials, information technology, life sciences and healthcare.

See: <http://www.frontierip.co.uk>

HighTechXL

Location: Eindhoven (the Netherlands)

HTXL runs start-up programmes, including its own accelerator and start-up support programme. Startup talent sourcing is done together with partners, e.g. the Technical University of Eindhoven. HTXL is heavily involved in community building and events through, for instance, organising an annual tech conference and supporting initiatives like Female Tech Heroes.

Recently, HTXL shifted its focus from “cute tech” (start-up accelerator) to deep tech (start-up accelerator and venture builder) in order to be more aligned with the high tech development in the Eindhoven region. The new core activity is run in partnership with big tech institutes such as CERN, TNO and IMEC. The venture building approach entails sourcing technologies from tech institutes and forming teams around possible applications via hackathons. This is followed by a 9-month venture-building programme, which includes the phases of shape, build and sell. The final aim is to have a fully funded venture that is ready to scale up.

See: <https://www.hightechxl.com>

NLC Health

Location: Amsterdam (the Netherlands) and Munich (Germany)

Created in 2014, NLC Health provides a package of services required by young inventors to transform health-tech inventions into new products and services. As inventors in medical services are dedicated to research and typically not equipped with the right skills to commercialise their ideas, most health inventions do not reach the market and patients. In the absence of venture capital, NLC steps in to support early-stage health-tech inventions at TRL 3 and 4. Thus, instead of selling IPs NLC creates ventures around them.

NLC takes an active role in founding companies, from conception to growth phase, from scouting to eventually transferring ownership. They provide capital, team, personal and technical support. Inventors' role depends on their needs and wishes. Most inventors choose to have a scientific or medical position, but some opt for the role of advisor, part-time project manager, or other.

See: <https://nlc.health>

FutuRx

Location: Israel

FutuRx is a collaboration among Johnson & Johnson Innovation (JJDC), Takeda Pharmaceutical Company, OrbiMed Israel Partners and the Office of the Israeli Innovation Authority of the Israeli Ministry of Economy to transform breakthrough discoveries into novel medicines.

FutuRx builds an initial team with a CTO that has industry experience and brings in a CEO at the post-seed stage. The CEO initially acts as a mentor and (part-time) chairperson to prepare the company for the next round and then takes on full-time CEO responsibilities. CEO salaries are capped and incentivised using equity-based payment schemes to attract more experienced CEOs. The Israel Innovation Authority Incubator Program has supported the creation of companies in high-tech and life sciences since 1991. There are specific measures to fund women entrepreneurs where the proportion of funding is 75 percent as opposed to the standard 50 percent of the total investment needed.

See: <https://www.futurx.co.il>

5. EUROPEAN POLICIES AND INITIATIVES

5.1 SME Policy Framework

The COSME programme focuses on strengthening the competitiveness and sustainability of European enterprises. It is designed to improve different aspects around SME growth including access to finance and markets, improving the business environment and promoting entrepreneurship.

The Entrepreneurship 2020 Action Plan focuses on entrepreneurship education (with emphasis on entrepreneurial mind-set), the environment where entrepreneurs flourish and grow (supporting start-ups, transfers of businesses, facilitation of restructuring), and awareness and outreach to specific groups (including women, migrants, young and senior entrepreneurs).

The Start-up and Scale-up Initiative addresses a number of concerns faced by start-up and scale-up companies across sectors. It has the ambition to create better conditions for businesses so that they can internationalise. It helps connect European start-up ecosystems, supports start-ups in finding the right business partners and skilled employees and encourages them to take part in public procurement. A set of measures to help start-ups secure and valorise their IP rights is also being proposed. Several actions aim to remove the regulatory and administrative barriers, e.g., a VAT simplification package for SMEs.

The European Enterprise Network (EEN) is the largest business support network in the world and helps firms to innovate, grow internationally, and find partners in other Member States. The strength of the network is its closeness to the companies. The network members know their local business environment and have contacts for business opportunities worldwide. EEN services aim to accompany businesses along their growth cycle, providing advice on participation in public procurement, securing IP rights, internationalisation, technology transfer and finding partners. The services are evolving, for example, EEN has recently introduced innovation (management) support and is piloting scale-up services.

Erasmus for Young Entrepreneurs is a cross-border business exchange programme that supports early-stage entrepreneurs and contributes to the development of new cross-border business opportunities. More than 7,000 exchanges have taken place between new and experienced entrepreneurs and there are over 20,000 applicants ready for an exchange. EYE has recently launched a pilot programme EYE Global that enables new entrepreneurs to gain experience in Singapore, Israel and the US.

5.2 Innovation Ecosystems

The European Commission will continue to invest in R&I as the primary source of productivity growth in advanced economies. The following factors hold European innovation back: (1) lack of breakthrough and disruptive innovations that create new markets, (2) the financing gap between R&D grants and private investment for scaling up innovative start-ups, and (3) many national and local ecosystems, resulting in regulatory, geographical, and cultural fragmentation at European level. Knowledge is being generated in Europe, but is not being taken up by markets. How can the EU be in the lead in the next wave of disruptive innovation?

The European Institute of Innovation and Technology (EIT) aims to enhance Europe's innovation capacity, competitiveness and quality

Box 8. Knowledge and Innovation Communities (KICs)

KICs help connect technology ecosystems that are fragmented, isolated and without direction. They have a pan-European dimension and offer resources that are specific to the innovation processes of different sectors (8 KICs to date). The network facilitates access to customers and a network of stakeholders. There are 150-200 partnerships per community, of which 70 percent are from industry.

of life. It brings together leading organisations from business, education and research, the so-called 'knowledge triangle', to form cross-border partnerships – the Knowledge and Innovation Communities (Box 8).

The European Innovation Council (EIC) aims to identify ground-breaking ideas, support businesses in scaling up, create new markets and encourage private investment. The EIC will fill a financing gap by funding high-risk innovations that cannot get private financing. The EIC offers the following services: a one-stop shop for breakthrough and disruptive innovations, agile funding from idea to investment, ecosystems and communities building. The EIC provides support from the pre-seed, scale-up to series A and B rounds. The EIC was piloted under Horizon 2020 and is fully incorporated into Horizon Europe.

5.3 EntreComp

EntreComp is a comprehensive reference framework developed by the Joint Research Centre (JRC) of the European Commission to define and describe entrepreneurship as a key competence for all citizens.

Entrecomp framework conceives entrepreneurship as a critical lifelong learning competence. Its aim is to create a common reference to bridge the world of education that applies across sectors. The framework is structured into three areas, 15 competencies, 60 thematic trends and further proficiency levels and learning outcomes (Figure 2). EntreComp describes the competences needed in order for people to become successful entrepreneurs, but it is neither prescriptive nor normative and can be tailored to the needs of individual organisations. For example, the EYE programme uses this framework for the self-assessment survey for programme participants.

The EntreComp Into Action User Guide²⁵ presents an overview of why, when and how to use the framework. It is designed to inspire anyone planning to work on entrepreneurial learning, through tips and examples of how others have used the framework and adapted it to fit their purpose. It includes practical examples, showing the potential of EntreComp across a range of sectors from formal education and training, non-formal and inclusive learning, employment and enterprise/start-up. It has been downloaded 60,000+ times since 2016.

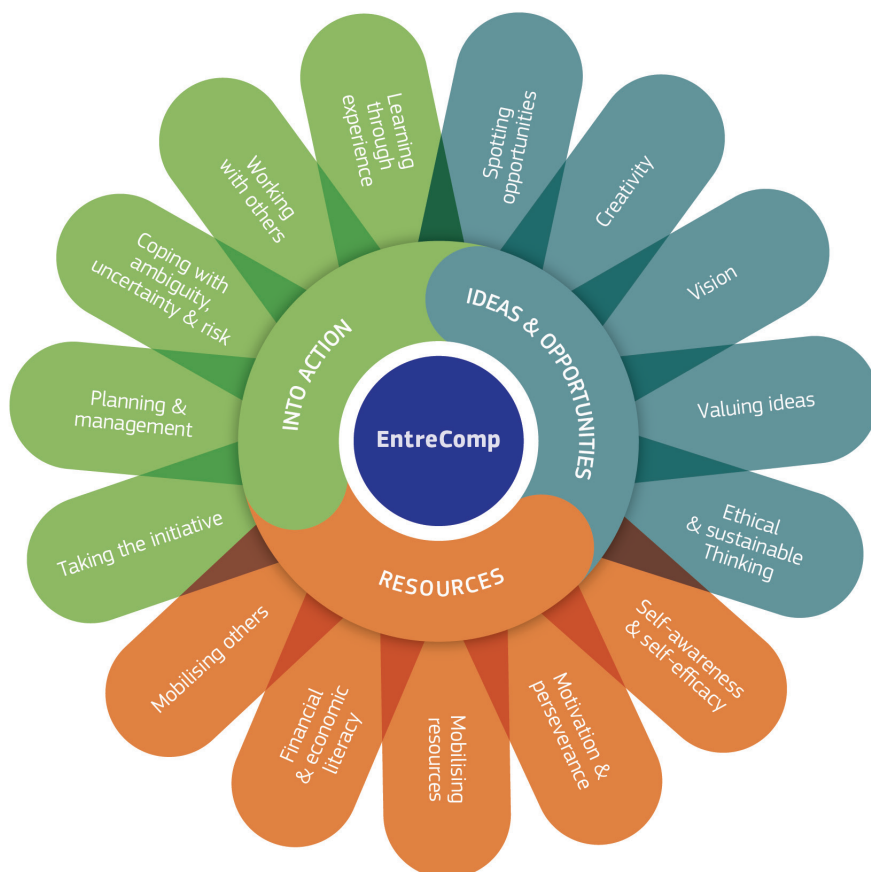


Figure 2: The EntreComp wheel
Source: The EntreComp Into Action User Guide (2018)

ENDNOTES

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