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New Business Ventures for a Circular Economy

A Policy Guide to Rethinking Entrepreneurial Ecosystems

Policy Insight

Authors:

Harald Wieser
Karin Bachinger
Daniela Hosner
Jakob Kofler
Viviano Wich

Austrian Institute for SME Research

Key Messages

- New business ventures can be focal leverage points in the transformation to a Circular Economy. To realise the full potential of business venturing, however, entrepreneurship ecosystems need to move beyond the support of 'born circulars' that adopt circular business models from the start. **p.2**
- The Circular Economy redefines entrepreneurship by shifting the focus from individual high-growth start-ups to the creation of resource-efficient ('circular') networks of value creation. This creates new demands for entrepreneurship ecosystems. **p.3**
- *Circular Entrepreneurship Hubs*, which adopt a 360° model centred on a key value chain like food or electronics, constitute the core pillars of a circular entrepreneurial ecosystem. **p.7**
- A 360° orientation involves also implementing resource-efficiency in the entrepreneurial ecosystem itself rather providing only services and infrastructures 'for circularity'. **p.9**

What to find in this Policy Insight

- This Policy Insight charts a path towards radically different entrepreneurial ecosystems that are able to fully exploit the potential of new business venturing for the transformation to a Circular Economy.
- A systematic overview of services and infrastructures that belong to a 360° entrepreneurship hub
- Case study insights from Vienna-based enterprises and support providers
- Policy recommendations
- Links to useful coaching toolkits and research

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Part I

Entrepreneurship and the Transformation to a Circular Economy

The Circular Economy fundamentally challenges how business is done. Instead of extracting primary materials and energy for final consumption, a Circular Economy demands that businesses contribute to the ongoing re-valorisation of natural resources. Through 'circular' strategies of narrowing, slowing, and closing resource flows, it becomes possible to minimise resource extraction as well as the production of greenhouse gas emissions and hazardous waste.[1]

- *Narrowing resource flows*: using fewer natural resources per service through lighter products, higher intensity of use, and a stronger focus on delivering services rather than products.
- *Slowing resource flows*: increasing the useful life of natural resources through design for longevity, repair and maintenance, and re-use of products.
- *Closing resource flows*: keeping natural resources in cycles through recycling and the design for disassembly, technology and biological cycles.

Effective circular entrepreneurship, which concerns the "processes of exploration and exploitation of opportunities in the Circular Economy domain"[2], is critical for the transformation to a Circular Economy. In contrast to large corporations, which frequently face various forms of inertia in effecting radical change and may tend to focus on reusing waste rather than finding novel solutions, new businesses ventures are often in a better position to deliver the disruptive innovations needed.[3] Early indications suggest that circular start-ups are pursuing more ambitious resource efficiency strategies than large firms.[4]

From 'Born Circulars' to Circularising Entrepreneurship

To succeed, business founders rely on a conducive environment that provides them with the resources necessary to develop promising solutions and grow their businesses. Public and private entrepreneurship agencies for new business ventures – from consultancy firms to accelerators and co-working spaces – will therefore need to play a pivotal role in making the Circular Economy a reality.

> *Circularising entrepreneurship is about leveraging the flexibility and open-endedness of entrepreneurial processes for the implementation of resource-efficient practices at early stages of business development.*

Yet, establishing dedicated support programmes for 'born circulars', i.e. businesses that "have been set up from scratch [...] applying the principles and business models of the circular economy"[5], will not be sufficient for enacting the transformation. In modern economies, business ventures are a central feature of economic change. The decisions made at early stages of business development today shape how resources will be used tomorrow. In Austria, for example, 27,1 % of start-ups give priority to ecological goals and another 35,9 % consider ecological goals important without prioritising them. The remaining 37 %, however, do not

[1] The three-dimensional framework is adapted from Bocken, N. M. P., de Pauw, I., Bakker, C., & van der Grinten, B. (2016). Product design and business model strategies for a circular economy. *Journal of Industrial and Production Engineering*, 33(5), pp. 308-320.

[2] Zucchella, A., & Urban, S. (2019). *Circular Entrepreneurship: Creating Responsible Enterprise*. Cham, Switzerland: Palgrave MacMillan. p. vii

[3] See Henriksson, M., Hultman, M., Johansson, N., Kaijser, A., & Wallsten, B. (2019). Social and ecological entrepreneurship in a circular economy: the need for understanding transitional agency. In A. de Bruin & S. Taesdale (Eds.), *A Research Agenda for Social Entrepreneurship (pp. 113-120)*. Edgar Elgar, Cheltenham.

[4] Bauwens, T., Mees, R., Gerardts, M., van Dune, J. et al. (2019). *Disruptors: How Circular Start-ups Can Accelerate the Circular Economy Transition*. White paper, Utrecht University, ING, Circle Economy, and Amsterdam Economic Board.

[5] Zucchella, A. & Urban, S. (2019): p. 89.

pursue ecological goals at all.[6] These figures show the huge potential of start-ups but also highlight the persistent need to anchor resource efficiency in entrepreneurial processes.

In relation to new business ventures, circularising entrepreneurship is about leveraging the flexibility and open-endedness of entrepreneurial processes for the implementation of resource-efficient[7] practices at early stages of business development.[8] Many entrepreneurs are interested and willing to learn about the new business opportunities created by the Circular Economy and adopt the principles of resource efficiency in business practice.

Business Perspective 1: Material and energy costs

"As a joinery, we naturally have a high material input. The costs for this make up about one third of our turnover. It is therefore very important for us, both ecologically and from a business perspective, to cut the products to size as efficiently as possible. In addition, our machines consume a lot of energy. We will soon change location, where we want to make the operating facilities as environmentally friendly as possible, from a thermal renovation of the facility to the installation of photovoltaic systems. This was not possible until now because we rented both the premises and the machines. However, the possibility of renting both was essential to be able to set up our business in light of the high acquisition costs."

Christian Penz, Founder and Manager of Nut & Feder, social-ecological joinery

Instead of focusing on circular entrepreneurs 'out there', this calls upon entrepreneurship agencies and policymakers to develop tailored Circular Economy programmes for a wide range of potential beneficiaries, independent of their background in matters of resource efficiency or level of 'circularity': from hyper-growth-oriented entrepreneurs to those putting ecological or social goals upfront.

More fundamentally, the Circular Economy redefines how entrepreneurial ecosystems create value for businesses and society. Circularising entrepreneurship is more than providing expertise and financial support. Instead, it demands a radical rethinking of entrepreneurial ecosystems as focal instigators of transformative change.

Two emerging needs can be put at the centre of the 'circular' approach to entrepreneurship: the increasing importance of natural resources and the generation of networks of value creation.

The heart of the Circular Economy: natural resources

From the perspective of resource efficiency, entrepreneurship and business venturing need to be recognised as materially and energetically intensive processes that do not operate on human skills and financial resources alone. Already, natural resources and material infrastructures frequently represent a major cost factor in early stages of business development (see Business Perspective 1).

> *In a Circular Economy, establishing successful networks of circular value creation needs to be at the front and centre of entrepreneurial efforts.*

High investment costs for materials stand in opposition to the need for spaces for failure and experimentation. The Circular Economy presents a significant opportunity in this regard: By adopting 'circular' strategies to the use of material inputs, entrepreneurs can significantly lower costs and risks of investment by avoiding administrative burdens of ownership, reducing space requirements, and optimising the utilisation rate of objects.

[6] Leitner, K-H., Dömötör, R., Raunig, M., Zahradnik, G. et al. (2021). *Austrian Startup Monitor 2020*. Vienna: Home Town Media.

[7] In this Policy Brief, we use 'circular' and 'resource-efficient' synonymously. Following the convention in the Circular Economy discourse, the notion of resources is reserved for natural resources only (unlike the broader use among business scholars and professionals).

[8] A more encompassing approach to 'circularisation' will also need to consider other forms of entrepreneurship such as corporate and institutional entrepreneurship.

Social Urban Mining at Ferry-Dusika Stadium – removal of gallery seats for re-use (BauKarussell)

As natural resources become even more valuable, demand for flexible, low-threshold access to critical resources and infrastructures can be expected to increase. The growing importance of natural resources in the Circular Economy therefore demands a significant shift in the types of resources that entrepreneurial ecosystems are expected to provide.[9] At the same time, entrepreneurial ecosystems are not exempt from resource flows and will need to be reconveived from a 'circular' point of view.

The foundation of the Circular Economy: networks of value creation

Reconfiguring resource flows from linearity to circularity requires an integrative perspective – not just of entire product life cycles but also of the diverse economic activities entangled in the delivery of specific services.[10] For example, developing biodegradable solutions for plastic products may do more harm than good to the environment in the absence of adequate composting infrastructures.

Creating circular resource flows thus cannot be achieved by individual entrepreneurs or businesses alone but requires collaborative, open innovations towards networks of actors that develop integrated solutions and jointly sustain the ongoing re-valorisation of natural resources. Establishing successful networks of circular value creation needs to be at the front and centre of entrepreneurial efforts.

In contrast to global supply chains, such networks may operate at a much more local scale to reduce transport costs (incl. greenhouse gas emissions). Furthermore, entrepreneurs may need to address a wide range of regulatory, geographical, and other local institutional conditions to find the most resource-efficient solutions.[11] For entrepreneurs, the Circular Economy thus brings about a heightened demand for exchange with potential partners right from the start (see Business Perspective 2).[12]

Business Perspective 2: From the virtual world to the things happening on the ground

"I have the impression that some entrepreneurship agencies see themselves as virtual facilities. Of course it is useful to exchange experiences with entrepreneurs working in the Circular Economy in other parts of the world, but for me the Circular Economy has a strong regional and local dimension that requires local solutions. Virtual events are not very attractive for us. As a business in the construction sector, we need to talk to local builders to push our services and grow local, regional, and national our network. In my view, entrepreneurship agencies need to shift their attention from the virtual world to the things happening on the ground."

Markus Meissner, project coordinator & co-founder of BauKarussell, a start-up for Social Urban Mining providing recovery-oriented demolitions of facilities

The emerging needs towards a more flexible, low-threshold access to natural resources and infrastructures and the increased focus on innovating networks of circular value creation demand significant adjustments in the services offered by entrepreneurship agencies, which will need to be accompanied by parallel shifts in the configuration of regional entrepreneurial ecosystems. Before turning to the kinds of services and infrastructures needed for the development of circular networks of value creation, however, it is meaningful to consider the implications of a Circular Economy for the organisation of entrepreneurial ecosystems.

[9] That natural resources are still widely recognised as components of entrepreneurial ecosystems can be seen in contemporary definitions of this concept, which consider only physical infrastructures such as the provision of energy and telecommunication (e.g. Stam, E., & van de Ven, A., 2021, Entrepreneurship ecosystem elements. *Small Business Economics*, 56, pp. 809-832.

[10] The research community has developed multiple theoretical perspectives to this end (e.g. 'product-service systems', 'service-dominant logic', 'material services').

[11] See for example Delgadillo, E., Reyes, T., & Baumgartner, R. J. (2021). Towards territorial product-service systems: A framework linking resources, networks and value creation. *Sustainable Production and Consumption*. 28, pp. 1297-1313.

[12] Zucchella, A. & Urban, S. (2019).

Part II

Circular Entrepreneurial Ecosystems

Entrepreneurial ecosystems are made of various economic, technological, and social elements that are organised to establish a conducive environment for the success of new business ventures. [13] Rethinking entrepreneurial ecosystems from a Circular Economy perspective needs to begin with the basic assumptions and principles that guide decisions regarding their organisation: How to address the diversity of new business ventures and their heterogeneous needs? Where is specialisation most productive?

Today, entrepreneurial ecosystems consist of a wide range of support providers, each specialised in different stages of business development and types of services.[14] Whereas universities, business incubators, and business angels, for example, typically focus on early-stage support, accelerators and venture capitalists tend to become more involved at later stages. Likewise, varied services such as the provision of finance or coaching are frequently delivered by separate agencies.

As a consequence of such stage- and service-based segmentations of the venture population, however, conventional entrepreneurial ecosystems[15] tend to concentrate on individual businesses or deliver services in a piecemeal fashion, which makes them ill-suited for generating functioning networks of circular value creation.

In a Circular Economy, value chains defined by differences in materials and products form the core organising principle of the economy. The European Commission's Circular Economy Action Plan, for example, focuses on the following value chains: electronics and ICT, batteries and vehicles, packaging, plastics, textiles, construction and buildings, and food, water and nutrients.[16] While cross-sector collaboration remains important, this approach to segmenting the economy helps to break down established sectoral divisions *along* value chains (with categories such as manufacturers, retailers, or householders) and put the focus firmly on the facilitation of material and energy flows instead.

Table 1: Comparison of conventional and circular entrepreneurial ecosystems

Entrepreneurial Ecosystem	Conventional	Circular
Contribution to Circular Economy	Support of circular business ventures ('born circulars')	Transformation of entrepreneurship following principles of circularity ('circularising entrepreneurship')
Entrepreneurial object	Individual businesses	Networks of value creation
Organising principle(s)	Stage of business development, type of service	Value chains (materials and/or products)
Key agencies	Incubators, accelerators, co-working spaces, investors, business agencies, consultants, universities	Circular entrepreneurship hubs with a 360° model, each specialised in a key value chain

[13] Cf. Audretsch, D. B., Cunningham, J. A., Kuratko, D. F., Lehmann, E. E., & Menter, M. (2019). Entrepreneurial ecosystems: economic, technological and societal impacts. *The Journal of Technology Transfer*, 44, pp. 313-325.

[14] Cowell, M., Lyon-Hill, S., & Tate, S. (2018). It takes all kinds: understanding diverse entrepreneurial ecosystems. *Journal of Enterprising Communities: People and Places in the Global Economy*. 12(2), pp. 178-198.

[15] In reality, there is not a standard but a wide range of entrepreneurial ecosystems. This analytical simplification allows us to delineate the distinctive features of circular entrepreneurial ecosystems.

[16] European Commission (2020). Circular Economy Action Plan: For a cleaner and more competitive Europe, COM(2020)98.

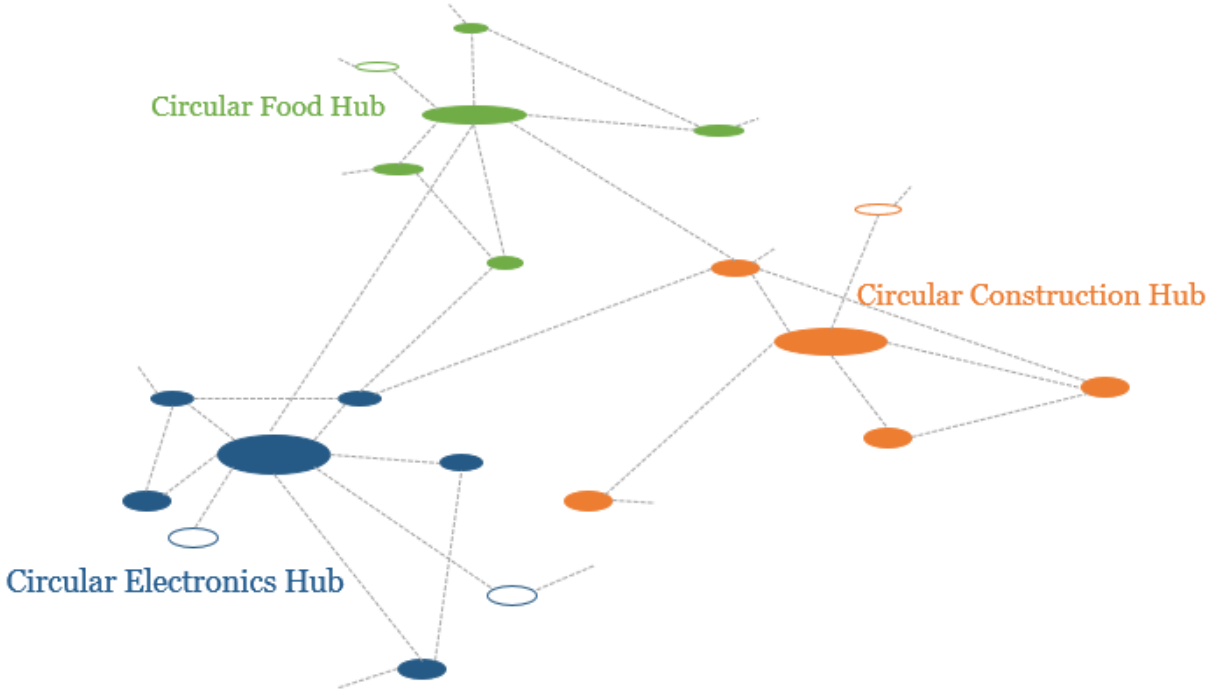

Figure 1: The structure of circular entrepreneurial ecosystems

As pillars of emerging Circular Economies, circular entrepreneurial ecosystems are organised around the key (local) value chains of the future (see Figure 1). We suggest that for each value chain, there is a "circular entrepreneurship hub" in place which acts as a central node and focal point of contact in the respective domain.

Business Perspective 7: 360° model

"What we are really missing as a hardware start-up is a hub that provides both a co-working space and a makerspace: some space for office work and meetings with potential suppliers or customers, a small room where we can store our prototypes and materials and some space where we can access machines and make some noise from time to time. If we could find such a hub, we would rent the space tomorrow."

Patrick Niklas Frank, co-founder of eiria, a start-up providing nature-based solutions against indoor pollution

"There are already many different concepts such as co-working spaces, co-making spaces or shared workshops, but there is no offer where you can become part of a community and get access to both office and makerspaces. I think of it as a centre that offers private spaces but also access to shared facilities for launching production. That's a concept we haven't found yet."

Elena Yaneva, CEO of Hempstatic, a start-up creating carbon-neutral insulation products from local hemp

Circular entrepreneurship hubs operate based on a 360° model that make use of the full spectrum of services and infrastructures for circularising entrepreneurship. In focusing on the realisation of *economies of scope*, they respond to increasing demand among business founders for spaces that can be used for both office work and manufacturing (see Business Perspective 7), while reducing search costs and the burdens related to the filing of applications for isolated support programmes.

As the go-to places in key resource or product sectors such as food or packaging, circular entrepreneurship hubs enjoy high visibility and bundle core material and business competencies in their respective domains. Circular entrepreneurship hubs thereby generate opportunities for entrepreneurs and other key actors in a selected value chain to interact and develop novel networks of circular value creation.

While acting as focal points of contact, circular entrepreneurship hubs are likely to rely on local networks of partners for delivering the varied services and infrastructures that entrepreneurs need. The following case studies of two emerging circular entrepreneurship hubs – Happylab and Herd Open Kitchen – provide some first insights into key challenges that this novel type of entrepreneurial agency may need to address. In part III we consider the range of services and infrastructures that characterise a 360° orientation.

CASE STUDY:

EMERGING CIRCULAR ENTREPRENEURSHIP HUB

Happylab

From makerspace to innovation workshop

Founded in 2006, Vienna-based Happylab is, by its own account, Austria's first makerspace. Today, Happylab offers a platform for Europe's largest maker-community with over 2,000 members spread across three locations in Vienna, Salzburg and Berlin. Happylab sees itself as an institution with an educational mission for the promotion of digital skills, for which it makes various digital devices, machines and equipment available to the general public: from 3D printers to laser cutters and a textile lab.

The offer has been greatly expanded over the years, following a 360° orientation that is reflected in an increasing number of designations such as Fab Lab, Makerspace, Innovation Workshop, High-tech Laboratory, Co-Working Space or Co-Making Space. In addition to hobbyists and professional designers, artists or technicians, Happylab has recently also turned to entrepreneurs, who can find offices, workshops and a vibrant community in one place.

Vision

Happylab wants to contribute to a "shared economy" that maximises the use of existing production facilities and tools. By providing access to underutilised assets, the aim is to give as many people as possible the opportunity to implement their ideas and create a space for making and innovation. In the medium to long term, Happylab aims to create a platform that provides access not only to its own facilities, but also to equipment and machinery of other potential providers. The ongoing expansion towards an "innovation workshop" for entrepreneurs and start-ups is co-financed by the public sector. The City of Vienna considers Happylab a flagship project of its economic strategy and core element of Vienna's start-up ecosystem.

Key challenge: connecting making and entrepreneurship

The strengthened focus on entrepreneurship is based on the idea that innovations often come about by chance. As a place for tinkering and fiddling, Happylab's members constantly generate new ideas that can become interesting and marketable products. However, Happylab faces the challenge of linking two worlds which seem to have little in common: the world of makers and the world of entrepreneurs. Many makers reject the market-oriented exploitation of their ideas and products, placing emphasis on self-efficacy, learning and community instead.

Nevertheless, several start-ups have emerged from the activities at Happylab in recent years. Since moving to larger premises in 2021, Happylab has intensified its efforts of promoting start-ups by providing a co-working office space and looking for start-up founders beyond the existing maker community. Today, members receive flexible access to both offices and workshops. In addition, all members receive coaching offers at a reduced price as well as free access to the community platform and to regular "School of Makers" events, where makers share their knowledge with others from community members. Start-ups can even draw on the community to test their prototypes and products.

A circular entrepreneurship hub?

Happylab exhibits many elements of a circular entrepreneurship hub as outlined in this guide, contributing to the circularisation of entrepreneurship, for example, by teaching ideas of open design, repair and maintenance, or the shared use of resources. Furthermore, the providers organise regular free Repair Cafés, while also encouraging the exchange of residual materials and partnering with a local waste company to ensure that plastic waste is recycled. Even the facility itself is partly made of re-used materials. Through its increasingly wide range of offers, Happylab is also turning into a central local hub for entrepreneurs in manufacturing sectors.

In some ways, however, the educational mission and aims of the "maker community" are even partly at odds with the Circular Economy. For example, being more selective in the material sectors addressed at the site, which would facilitate sharing and re-use, seems to be in conflict with the mission of fostering digital skills across all social groups. At Happylab, the providers feel that the traditional focus on industrial materials has contributed to the dominance of male members, preferring a more diversified approach instead.

Despite the focus on key 'circular' practices such as repair and maintenance, the resource efficiency of 'making' is contested. For instance, small-scale making is not necessarily more materially efficient than mechanised production processes. Some studies also cast doubt over the importance of environmental sustainability in makerspaces.[17] Such potential problems with making may not apply in the context of circular entrepreneurship, however, where making can be a creative and productive step towards scalable, resource-efficient solutions.

More information: https://www.happylab.at

[17] Vinodrai, T., Nader, B., & Zadarella, C. (2021). Manufacturing space for inclusive entrepreneurship? A study of makerspaces in southern Ontario. *Local Economy*, 36(3), pp.205-223.

CASE STUDY:

EMERGING CIRCULAR ENTREPRENEURSHIP HUB

Herd Open Kitchen

From shared kitchen to 360° food business agency

Herd Open Kitchen is the brainchild of the three founders of 'Wrapstars', Austria's first food truck business. After sharing a kitchen with fellow businesses for four years, they decided to expand this concept and open a co-working kitchen for new and small enterprises in the food sector. Since its inception in 2017, however, Herd has become much more than a co-working kitchen, offering also an online-community, storage space, cleaning and maintenance services, a podcast, and an accelerator programme providing access to experts, retailers, and investors.

Vision

In setting up Wrapstars, Herd's founders had to spend too much time and effort in applying for each support programme, while struggling to find the longer-term support they needed for getting a foothold in the industry. With Herd, their aim is to develop an alternative to this fragmented entrepreneurial infrastructure, where entrepreneurs can find a 360° offering and long-term support tailored to the specific challenges in the food sector.

Key challenge: balancing demand and scale-up needs

Sharing a kitchen for prototyping and producing food has many advantages for both new and established small businesses. Given high acquisition costs of at least € 100,000, administrative hurdles and uncertainties regarding the scale of production, investing in a kitchen may carry considerable financial risks and require much effort. It is thus already common for business founders to rent old kitchens. Yet, the founders of Herd stress that many entrepreneurs are new to the industry and frequently have little knowledge of kitchens, not knowing what to buy and how to use it. Whether new or rented, chosen kitchens are therefore rarely up to the task.

Many entrepreneurs are new to the industry and frequently have little knowledge of kitchens, not knowing what to buy and how to use it. Through gaining access to a shared kitchen, entrepreneurs learn what a professional and high-quality kitchen can do and what equipment they need.

At Herd, entrepreneurs learn what a professional and high-quality kitchen can do and what equipment they need. The co-working kitchen can be used for prototyping and even large-scale production. A core element of Herd's model is that it supports also small businesses wishing to use the kitchen permanently. Supporting new businesses and establishing a space for long-term collaboration thus go hand in hand.

However, to make this arrangement work, the provider has to balance competing requirements in terms of kitchen size. On the one hand, the kitchen needs to be large enough to prevent conflicts over access and allow for scaling up of production. The costs of buying a large kitchen and renting suitable facilities can be prohibitive. On the other hand, the focus on a specific sector means that there may not be enough interested businesses and start-ups in the target area. For Herd, two factors were therefore crucial: the location in a large city with many food start-ups and the public authorities' provision of a suitable vacancy with lower rent obligations.

A circular entrepreneurship hub?

The provision of a co-working kitchen leads to a higher utilisation rate of existing resources but also creates important knock-on effects by ensuring that business leaders gain the necessary know-how for buying an appropriate kitchen that fits their needs. This may prevent poor investment decisions and premature kitchen replacements.

The rental model of Herd thus represents an important contribution towards more circular entrepreneurship. To be sure, Herd has not pursued a broader and pro-active adoption of circular strategies for improving resource efficiency. For example, there have been multiple requests from start-ups for a more systematic re-use of food at the site, but Herd has not yet been able to find a suitable solution. That informal exchanges of residuals are still happening is rather an indirect consequence of the co-location at Herd and the start-ups' common focus on food.

In fully embracing the idea of a 360° model centred on the collaborative development and marketisation of business solutions in the realm of a specific material category (food), however, Herd embodies the attention to natural resources and networks of value creation that are characteristic of a circular entrepreneurship hub.

More information: https://www.herd.wien/

Part III

Going 360° in Circularising Entrepreneurship

There are many ways in which entrepreneurial ecosystems can accelerate the transformation to a Circular Economy. However, not all activities, programmes, or organisations touted as 'circular' immediately contribute to resource efficiency and important resource-efficient strategies that are already widely implemented are not always recognised as such. Better awareness of the range of activities available for circular entrepreneurship hubs can help developing a more comprehensive and ambitious 360° model that leverages existing strengths and addresses persistent blind spots.

In thinking through potential activities, we suggest that it can be helpful to distinguish them along two lines:

- **Circular / for Circularity**: An activity can be considered circular when it is implemented in a resource-efficient manner. Most measures implemented in entrepreneurial ecosystems today, however, focus on delivering improvements in resource efficiency elsewhere (e.g. in new businesses). They can be considered activities 'for circularity'. This distinction thus makes the specific contribution to resource efficiency more explicit and invites thinking about the material and energy footprint of the entrepreneurial ecosystem itself.
- **Services / Infrastructures**: In contrast to services, which deliver a relatively clearly defined performance or result to a specific user, infrastructures sustain a potentially wide range of activities for multiple users. This analytical distinction brings the wide range of entrepreneurial resources that can be productively and resource-efficiently rented (in the case of services) or shared (in the case of infrastructures) to the fore.

Following these distinctions leads to four generic strategies of how entrepreneurship ecosystems can contribute to the Circular Economy (see Figure 2). Taking a closer look at each category, the following pages provide an overview of the various activities that can be implemented. At the end of part III, we consider the current stage of developments in the circularisation of Vienna's entrepreneurial ecosystem to get a better idea of which activities are implemented in practice and where the most significant bottlenecks are located.

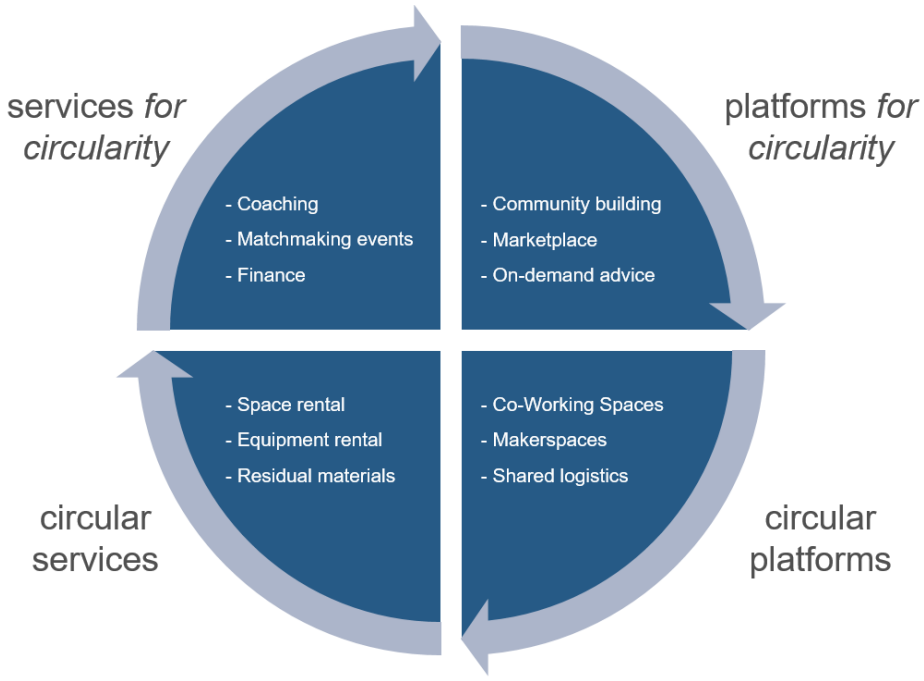

Figure 2: 360° orientation to circularising entrepreneurship (exemplary activities)

Services for Circularity_creating circular business models

Even for experienced and well-prepared entrepreneurs, establishing a new business frequently means to go through an intensive trial and error process that presents many unexpected challenges. While the Circular Economy generates new business opportunities, such opportunities are not yet widely recognised among entrepreneurs.

Moreover, establishing a circular business requires basic knowledge of resource efficiency and material qualities, matters that are rarely addressed in business and management education programmes (see Business Perspective 3). In addressing such common problems, services for circularity equip entrepreneurs with the capitals[18] necessary to thrive in the transformation to a Circular Economy.

Providing information and finance have long been core competencies of many entrepreneurship agencies. Across the Globe, many agencies are already leveraging these competencies by providing customised services for circular start-ups and entrepreneurs interested in the Circular Economy. Interested parties can thus draw inspiration from a wide range of existing services for circularity.

Business Perspective 3: Material expertise

"In my opinion, every company should aim for circularity in the long term. But I also think that it can be difficult at the beginning, given the limited resources in terms of time and money, to position yourself from the beginning in such a way that you are completely able to enact all principles of circularity. For us, it was mainly about learning to run at first. Taking circularity into account was difficult because we were so busy designing and conceiving a working product in the first place. At the same time, we didn't know how best to integrate circularity, simply because it wasn't part of our university education and it was not mentioned in any incubation programme. Such programmes and workshops are always very theoretical with a big focus on the economic side and very little on product development. Especially for hardware start-ups like us, there are very few expert opinions in such workshops on how we could develop more circular products, perhaps from electrical engineers or material scientists. Such experts could have advised us on critical issues such as the selection of sustainable materials, the process of product development and the costs involved."

Patrick Niklas Frank, co-founder of eiria, a start-up providing nature-based solutions against indoor pollution

Key services for circularity

- Educating about Circular Economy and identifying business opportunities

  Public talks, roundtables, or workshops with established Circular Economy actors can grow awareness for the need of a Circular Economy and the business opportunities this transformation creates (see Business Perspective 3).

- Turning ideas into viable circular business models

  Circular Economy experts have adapted many established coaching tools that can aid entrepreneurship agencies at delivering tailored services for the development of circular business models. Coaching on circular business models could be integrated as a standard component of consultation services.

- Providing assessments of resource efficiency

  Beyond established life cycle and sustainability assessments, entrepreneurship agencies can draw on a growing number of tools for assessing the circularity or resource efficiency of a business.

- Organising matchmaking events

  Matchmaking events provide entrepreneurs the opportunity to meet and speak to selected key stakeholders in the Circular Economy.

- Providing finance for circularity

  Awards, grants, stipends and funding schemes can provide important financial incentives for entrepreneurial activities in the Circular Economy domain. Equity and debt finance, meanwhile, can be leveraged to foster the adoption of circular business models.

[18] The Circular Economy relies on a wide range of 'capitals': natural, manufactured, financial, human, social, political, cultural, and digital (Noguiera, A., Ashton, W. S., & Teixeira, 2019, Expanding perceptions of the circular economy through design: Eight capitals as innovation lenses. *Resources, Conservation & Recycling*, 149, 566-576.

Infrastructures for Circularity_facilitating resource-efficient material flows

A productive and resource-efficient flow of materials rests on solid partnerships. For many entrepreneurs, finding business partners in an economy that predominantly operates on 'linear' principles frequently ranks among the biggest challenges. Likewise, it remains difficult to find likeminded entrepreneurs and customers interested in thinking entire value creation networks anew.

Infrastructures can play a critical role in the circularisation of entrepreneurship as platforms that facilitate interactions among entrepreneurs as well as between entrepreneurs and other key actors like investors, customers and already established businesses. By confronting the entrepreneurial spirit and creativity with the concrete material flows in and out of established businesses, for example, new solutions and partnerships can be established. Of particular importance in the Circular Economy is the facilitation of processes of co-creation between businesses and households. This is a domain that entrepreneurship agencies have relatively neglected in the past.

Business Perspective 4: Exchanging experiences and finding locations

"To succeed in developing a circular business, exchanging experiences with likeminded people and getting to know the various needs and perspectives of different local stakeholders are crucial. The network that we could build through our engagements in various support programmes helped us immensely so far. However, we still struggle to find an appropriate location for production even though there are plenty of vacancies across the city. This is an area where we would appreciate more support."

Elena Yaneva, CEO of Hempstatic, a start-up creating carbon-neutral insulation products from local hemp

Key infrastructures for circularity

- Providing spaces for interaction

  Spaces where business founders can interact with peers and various stakeholders remain as important as ever in a Circular Economy. Such spaces can range from social media groups to concept stores where entrepreneurs can showcase their products.

- Providing on-demand expert advice and information

  Entrepreneurs working in the Circular Economy tend to face specific challenges in relation to existing regulatory frameworks and the treatment of materials (see Business Perspective 3). On-demand expert advice and information (e.g. FAQs, Wikis) can help entrepreneurs when they need it most.

- Building circular communities

  Platforms enabling the formation of circular communities have distinct advantages for entrepreneurs, allowing them to increase their visibility, get access to various stakeholders and benefit from mutual experiences. Many circular entrepreneurs are keen to share their experiences.

- Establishing a marketplace for secondary resources

  Low-threshold secondary resources can significantly reduce R&D and production costs for entrepreneurs. Furthermore, greater visibility of the quality and quantity of secondary resources available on the local market can provide the critical impetus for the development of new business ideas and ventures.

Circular Services_delivering resource-efficient performances

While services and infrastructures *for* circularity help entrepreneurs to develop circular businesses and networks of value creation, they leave the material foundation of the services and infrastructures provided by entrepreneurship agencies themselves untouched. This not just neglects the resource intensity of entrepreneurial ecosystems and undermines the providers' credibility in promoting circular businesses but misses out on the opportunity to showcase how a Circular Economy works in practice.

Circular services apply the strategies of narrowing, slowing, and closing resource flows to the provision of entrepreneurship services. To some extent, this is already common practice. Although rarely recognised as a circular service, most business incubators consider the rental of office space and equipment a core pillar of their service model. However, as the following list of key circular services indicates, there is still considerable scope for circularising entrepreneurship services.

Key circular services

- Providing space rental

  Beyond office space, many entrepreneurs also need spaces for production and storage.

- Providing equipment rental

  As for spaces, entrepreneurship agencies can provide access to a wide range of equipment – from small tools through a 'library of things' to machineries for longer-term rental (see Business Perspective 5).

- Providing residual material

  Through collaborations with waste facilities or established businesses, entrepreneurship agencies can provide low-cost residual material for prototyping and production.

- Providing resource-efficient professional services

  A consistent circularisation of services does not stop short of professional services such as coaching sessions and workshops, which consume materials and energy too.

Business Perspective 5: Equipment rental

"When you start a business, you're happy with anything that you don't have to buy. Co-working spaces are a great offer in this respect. But beyond that, it would be fantastic to be able to borrow different tools for short-term use or until you know if it works for your business and it's worth buying it yourself."

Gabriela Sonnleitner, Manager of Magdas, a social business providing hotel, recycling, food, and cleaning services

Growing organic mushrooms based on re-used coffee grounds and straw at Hut & Stiel

Circular Infrastructures_delivering resource-efficient infrastructures

Circular infrastructures first and foremost operate on the premise that asset or resource sharing is a key practice for businesses to improve their resource efficiency. Entrepreneurs and business ventures in particular can benefit from low-risk access to costly facilities needed to make first steps in product, service or business development. However, asset sharing may also support the scaling up of production and even lay the foundation for long-term sharing solutions and the development of cooperatives.

Today, asset sharing in the entrepreneurial world is mainly associated with co-working spaces. Businesses such as entrepreneurial cooperatives show that there is much more that could be shared productively, however. Furthermore, entrepreneurial agencies still tend to pay little attention to other dimensions of resource efficiency such as the longevity, re-useability or recyclability of their facilities.[19] Like circular services, there is largely untapped educational potential in providing circular infrastructures as sources of inspiration for entrepreneurs.

Business Perspective 6: Shared research spaces

"What would be really cool is a kind of Kitchen Lab or a kitchen for experimenting and processing food. We not only grow mushrooms but also process them into new products. But to pay off a kitchen, we would need to produce huge quantities of jars every year. That's where it would make sense to rent a low-cost, low-threshold place to start production or to develop new products. We have something like a Future Food Lab planned, but such projects often get lost in the daily grind and stress. I already have a whole list of companies that would be interested because we very often have the same problem in the food start-up scene in Vienna and Austria."

Manuel Bornbaum, Founder & Managing Director of Hut & Stiel, a start-up growing organic mushrooms based on re-used coffee grounds and straw

Key circular infrastructures

- Co-working spaces

  Co-working spaces are already widely available and have become an indispensable part of entrepreneurial ecosystems. Through sharing, entrepreneurs can get access to fully equipped offices in prime locations.

- Makerspaces

  Makerspaces provide access to cutting-edge machines for experimentation, prototyping, and small-scale production. While originally established by and for the 'maker community', there is increasing demand from entrepreneurs seeking access to expensive machines (see Business Perspective 6).

- Shared logistics and marketing

  Beyond facilities such as offices and machines, there is considerable potential in sharing logistics and marketing operations as a means to reduce costs and resource needs. For example, the offer of co-working spaces could be extended by shared product packaging service.

- Resource-efficient facilities

  Shared use represents only one of many strategies for enhancing the resource-efficiency of entrepreneurial infrastructures. Other important strategies include the use of renewable energy, minimising the size of the facilities, designing the building for disassembly, and using a refurbished or re-used inventory.[20]

[19] The Belgian provider Entrakt, for example, adopts a radically different approach in its 'Circle Park' project by developing modular facilities which can be disassembled and re-build, allowing the provider to establish temporary incubators at abandoned sites.

[20] Kubbinga, B. et al. (2018). *A Framework for Circular Buildings*. Circle Economy, DGBC, Metabolic, SGS Search, Redevco: Amsterdam.

Circularising Entrepreneurship in Practice: The Case of Vienna

With around 10,000 business foundations and more than 100 new start-ups each year, Vienna is Austria's entrepreneurship hotspot. A high quality of life, a vibrant cultural scene, a strong economy, and a large network of research institutions are considered core drivers of entrepreneurial activity in the city. Vienna's entrepreneurial ecosystem is also characterised by an exceptionally important role of public funding. While regional and national funding agencies provide strong support for business ventures and early-stage start-ups, access to equity finance from venture capitalists and investors is widely recognised as relatively underdeveloped.[21]

The City Council's "Smart City Wien Framework Strategy 2019-2050" envisages Vienna as "a hub of a closed-loop, resource-efficiency economy".[22] The Circular Economy thus acts as an important economic model of a more desirable, sustainable future. Innovative businesses and start-ups are attributed a key role in realising this vision. To date, however, coordinated efforts towards a Circular Economy are taking place only in the construction sector, where the City Council has installed a transdisciplinary programme "DoTank Circular City 2020-2030" to foster collaboration and exchange towards a circular built environment.

The circularisation of entrepreneurship in Vienna has thus largely been driven by bottom-up initiatives. Figure 3 provides an overview of some of the most noticeable programmes and platforms that have been set up in recent years. RE:WIEN, an incubation programme launched by

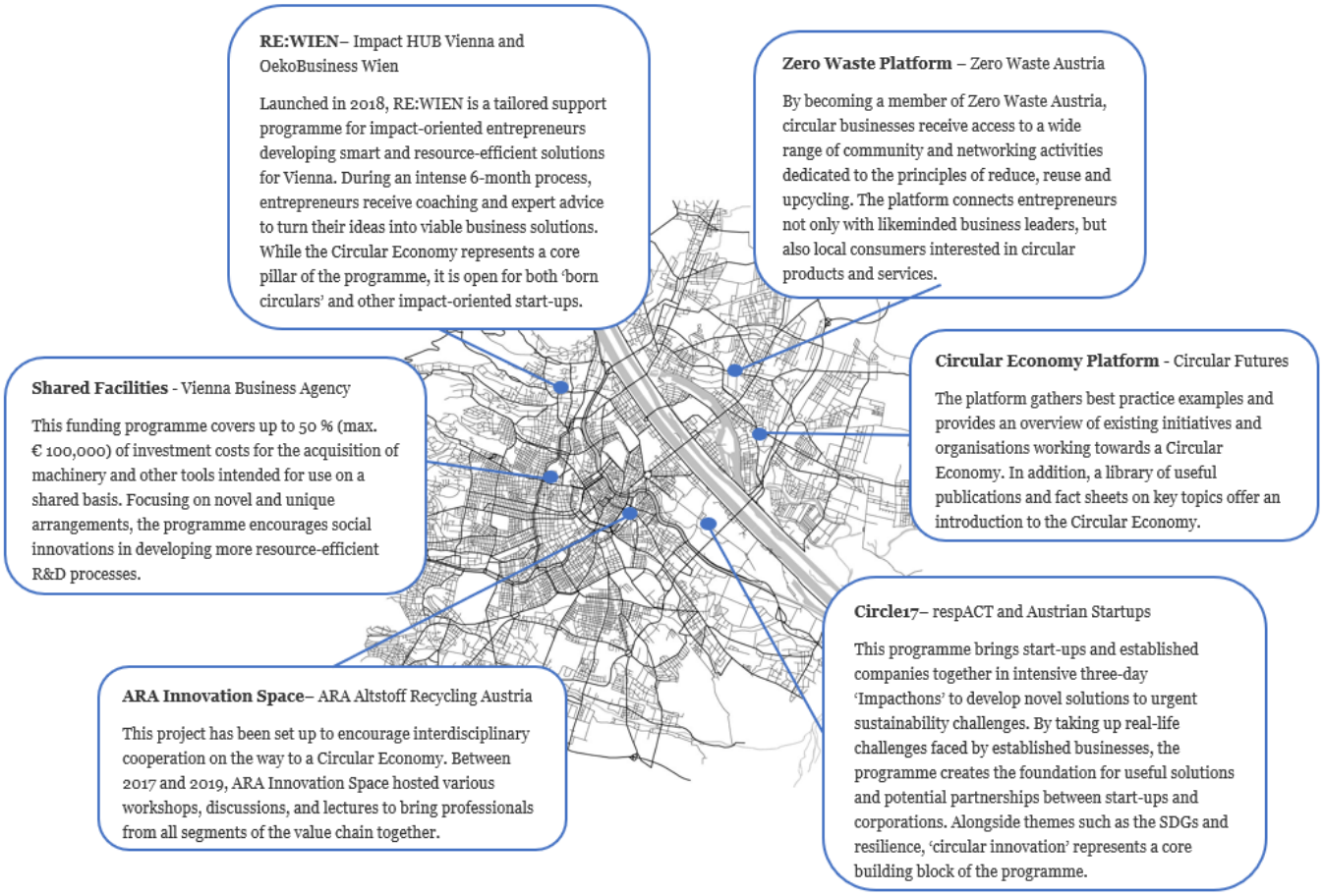

Figure 3: Circular Economy Initiatives in Vienna's Entrepreneurial Ecosystem

[21] Radinger-Peer, V., Sedlacek, S., & Goldstein, H. (2018). The path-dependent evolution of the entrepreneurial ecosystem (EE) – dynamics and region-specific assets of the case of Vienna (Austria). *European Planning Studies*, 26(8), pp. 1499-1518.

[22] City of Vienna (2019). *Smart City Wien Framework Strategy 2019-2015*. Vienna.

Impact Hub Vienna and OekoBusiness Wien, for example, has supported many of Vienna's leading circular start-ups in their early stages of development. The programme benefits from a sizeable share of social entrepreneurs working in the Circular Economy domain.[23]

The rise of dedicated Circular Economy platforms and specialised consultancy agencies testifies to the increasing efforts at closing the gap between entrepreneurship and the Circular Economy. For example, the organisation Kreative Räume Wien supports entrepreneurs in finding vacant spaces and connects them with established providers such as Herd Open Kitchen. Other initiatives are less readily associated with the Circular Economy but can be considered as innovative approaches of promoting resource efficiency. For example, Vienna Business Agency's "Shared Facilities" programme makes no claims regarding its contribution to the Circular Economy, even though it provides a financial incentive for the joint use of infrastructures that are not yet widely shared. As such, the programme represents a significant extension to sharing-based offers such as the already large number of co-working spaces in the city.

From a bird eye's perspective, the circularisation of Vienna's entrepreneurial ecosystem predominantly focuses on standard services such as coaching offers, networking events, public presentations, and the provision of co-working spaces. Only a small segment of the full spectrum of possible strategies for circularising entrepreneurship presented in this guide has been pursued to date. For example, circular services are little established beyond the rental of space and manufacturing or prototyping facilities.

Even in relation to traditional instruments such as finance, however, there are already considerable mismatches between supply and demand as the matrix depicted in Figure 4 reveals.[24] Furthermore, the existing entrepreneurial ecosystem appears highly fragmented from a Circular Economy perspective, with experts noting a lack of specialisation in existing services (e.g. pitching events with circular economy investors) and focal points of contact (e.g. circular hubs, one-stop shop) as important bottlenecks in the circularisation of entrepreneurship in Vienna. In the concluding section of this Policy Insight, we provide some suggestions for moving forward.

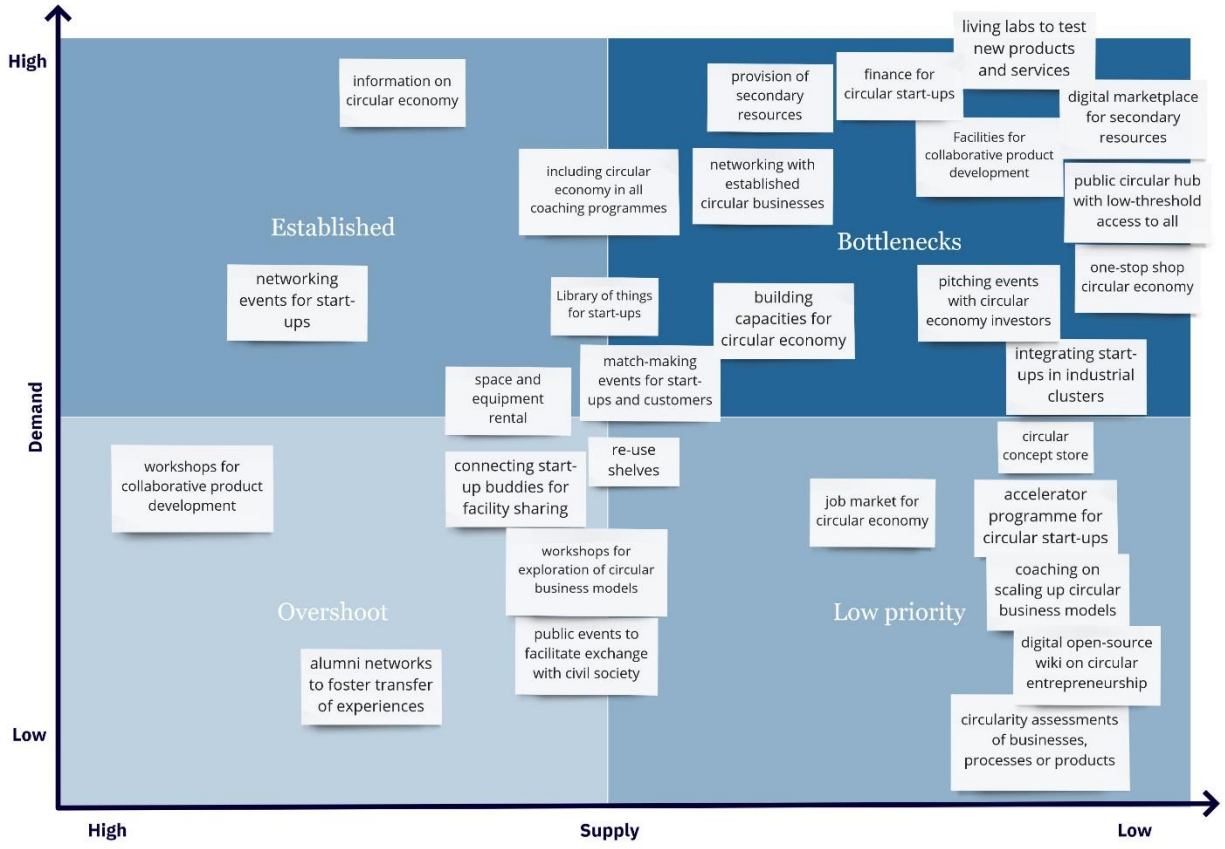

Figure 4: Supply-Demand Matrix for Circular Entrepreneurship Services and Infrastructures in Vienna

[23] Social Entrepreneurship Network Austria (2020). *Social Entrepreneurship Monitor Österreich 2020*. Vienna.

[24] The matrix has been developed in a workshop with 11 Vienna-based experts in entrepreneurship and Circular Economy.

Policy recommendations

By applying existing solutions to the new challenges posed by the Circular Economy, today's entrepreneurial ecosystems are not realising their full transformative potential. Creating circular entrepreneurial ecosystems, as outlined in this Policy Insight, requires a critical re-examination of what entrepreneurial agencies can do to accelerate the transformation to a Circular Economy, moving far beyond the support of circular businesses existing 'out there'. The following bullet points provide a condensed set of key actions that policymakers can take to support the creation of circular entrepreneurial ecosystems.

Awareness-raising and capacity-building

- The Circular Economy has become a cornerstone in policymaking, but it still plays only a minor role in established entrepreneurial ecosystems. Raising awareness of the implications of a Circular Economy for entrepreneurial agencies and charting long-term pathways of transformation can be critical to get all actors on board.
- There continues to be a significant gap between entrepreneurial ecosystems, where business and management competencies abound, and the various communities (e.g. makers, material scientists, artisans, chemists) with the necessary material expertise to develop new business ventures and networks for a Circular Economy. Creating linkages between these communities – in education and through incentives to collaborate (e.g. funding of pilot programmes) – is likely to be a prerequisite for the development of circular entrepreneurial ecosystems.

Scoping

- Generating a comprehensive territorial picture of existing entrepreneurship agencies and their respective competencies with respect to various strategies of circularising entrepreneurship can reveal persistent blind spots and missed opportunities (see p. 16 for Vienna).
- Decisions on the specialisation of circular entrepreneurship hubs need to be based on solid assessments of the expected demand from business ventures in different value chains. In rural regions and small towns, the target population may be too small for setting up a dedicated hub in some domains. Furthermore, commissioning an in-depth analysis of local or regional material and energy flows can offer valuable information on the sectors where a shift to a Circular Economy has the greatest potential.

Learning and experimenting

- While there are examples of emerging circular entrepreneurship hubs, the development of such agencies is still unfolding and has not yet been linked to a broader transformation of entrepreneurial ecosystems. To support the transformation, policy initiatives should therefore foster cross-national learning from leading projects and implement reflexive monitoring systems to track successes and failures.
- Circular entrepreneurship hubs are large, complex organisations that provide spaces and many other benefits to a diverse population including entrepreneurs, citizens, investors, and waste companies. As such, they act as beacons of innovative activities in their respective value chains. Bringing such hubs to life will therefore require creative, inter- and transdisciplinary collaborations of architects, urban planners, designers, and social scientists among others. This will also require room for continuous experimentation, as hubs need to be adapted to the specific needs in each value chain. Where uncertainty is too high, funding pilot projects in vacant locations can be a way of gaining valuable experiences before a new hub is established.

Funding

- Circular entrepreneurship hubs can operate financially independently, but their construction entails significant investments. Public funding was therefore crucial for the establishment of the two emergent circular entrepreneurship hubs presented on the previous pages (see pp.7-9). Beyond financial subsidies, it is particularly important to provide access to suitable locations.
- The selection of value chains, for which circular entrepreneurship hubs are planned, should be made in alignment with regional, national, and supranational Circular Economy roadmaps.
- Public funding should be linked with a set of criteria which guarantee the contributions of entrepreneurial ecosystems to Circular Economy goals.

Further resources

Ongoing research projects to follow:

DIRECT HUBS (2021-2023) develops the concept of transformation hubs for sustainable, circular urban food systems. https://www.alchemia-nova.net/projects/direct-hubs/

Pop-Machina (2019-2023) examines circular collaborative production in urban areas, developing circular makerspaces for local communities and accelerator programmes for entrepreneurs. https://pop-machina.eu/

DigiCirc (2020-2022) develops new digital technologies for monitoring materials and organises business accelerator programmes to support innovations for a Circular Economy. https://digicirc.eu/

REFLOW (2019-2022) centres on makerspaces and Fab Labs as catalysts of change towards circular and regenerative cities. https://reflowproject.eu/

Collections of Circular Economy tools for teaching, assessing, modelling, and managing:

https://circulardesign.tools/

https://www.circularstart.eu/

https://circular.berlin/education/tools/

https://www.ceguide.org/Resources-and-tools

https://tools.katche.eu/

https://circitnord.com/tools/

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About this document

This publication is based on exchanges with 14 businesses and 11 entrepreneurship agencies and research organisations (Austrian Institute of Ecology, Circular Economy Forum Austria, Happylab, Herd Open Kitchen, Impact Hub Vienna, Kreative Räume Wien, OekoBusiness Wien, respACT – Austrian Business Council for Sustainable Development, Social Entrepreneurship Network Austria, Vienna Business Agency, Zero Waste Austria) from Vienna. Additional inspiration was taken from studies of 'Circle Park' and 'Citygate' (Entrakt, Belgium), the 'Circular Economy Accelerator' (Zero Waste Scotland), the 'Better Together' programme (Impact HUB Berlin), and the "Pop Machina" project (KU Leuven). All interviews and a workshop with entrepreneurship and Circular Economy experts were conducted between February and September 2021. Finally, we would like to thank Irina Nalis-Neuner, Marlene Lötsch, and Mark Neuner from MostLikely for inviting us to collaborate on their model of a common space circular workshop, which was an important inspiration for the concept of circular entrepreneurship hubs presented here.

The research project received funding from the Municipal Department for Cultural Affairs and Science, City of Vienna.

Stadt Wien

Suggested citation: Wieser, H., Bachinger, K., Hosner, D., Kofler, J., & Wich, V. (2022). *New Business Ventures for a Circular Economy: A Policy Guide to Rethinking Entrepreneurial Ecosystems*. Policy Insight No. 1. Vienna: Austrian Institute for SME Research.

Contact: Harald Wieser, h.wieser@kmuforschung.ac.at

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