DIGICIRC

WP2 – INVOLVE: Generating the DigiCirc Ecosystem

D2.1: DIGICIRC ECOSYSTEM VISIONPAPER

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2.0	29/05/2020	Final version	Feedback from reviewers integrated and addressed	Association Blue Community

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Note from the DigiCirc team

We are a group of clusters, companies and research organisations from across Europe.

Our aim is to **bring together a large and synergistic group of companies, public authorities, research groups, and corporates to create an *open innovation ecosystem* for the Circular Economy**. We recognise **digital technologies as one of the keys to the circular transition**, and we want to actively support this enabling role.

Our effort is implemented by a 3-year project supported by the European Union, DigiCirc. This is our launchpad, from which we want to create a self-sustaining network that will support digital circular innovation into the future.

***You, the reader*, are likely to be someone with which we want to work with**: a manager working in a cluster, an owner of a small/medium enterprise (SME), a public servant, a corporate executive, an investor or a researcher.

Why should you read further and contemplate to join us?

A Circular Economy is simply a necessity, and at the same time it is an inspiring challenge and a major business opportunity. Current results on the market are a thin shadow of their full potential, and there is **much to be done and much to be gained**.

DigiCirc is an ambitious initiative to unlock circular innovation through digitalisation. **We call on the bold pioneers from across Europe to join us: out of duty, out of necessity, out of opportunism, and out of altruism**.

We look forward to working with you all.

-The DigiCirc team

Executive summary

The shift to the Circular Economy represents a perpetually sustainable solution to ensure prosperous societies in the future.

Circular transition is already a European policy priority. The 2019-2024 European Commission has drafted the European Green Deal and has charted an ambitious roadmap towards a zero net greenhouse emission economy by 2050, placing circular economy at its core.

Circular transition also represents a major business opportunity to better valorise existing resources in a value chain.

Although many European companies have begun to propose and implement innovative circular solutions at the local level, they face significant challenges in terms of logistics, regulation compliance and costs.

Success in creating a Circular Economy will depend on the capacity of circular businesses to scale, as well as partner-up and coordinate among themselves and with other stakeholders in the economy/society. A system innovation approach is needed to create a *critical mass*, overcome major barriers and realise significant impact.

To this end, digitalisation is a key enabler with large potential to integrate and reconfigure existing value chains toward the goal of a Circular Economy.

Together with conducive policies and active support from key intermediaries such clusters, digitalisation will help catalyse a European transition to a Circular Economy.

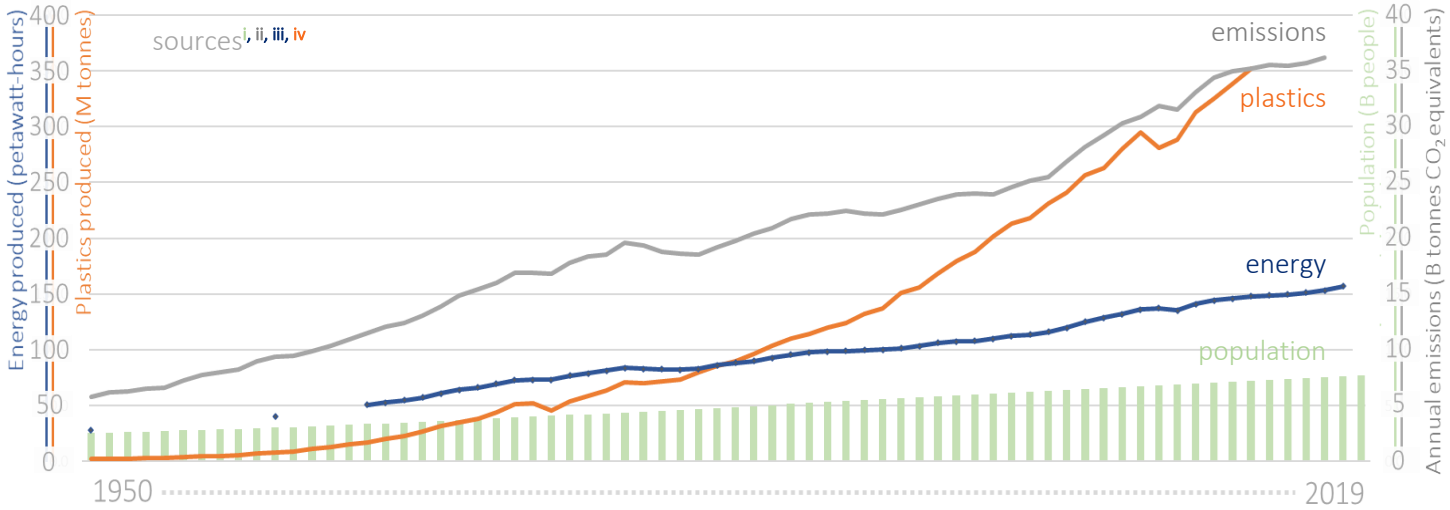
It is in this context that we plan to create the DigiCirc Ecosystem, as an integral part of the DigiCirc project.

We seek to work with promising SMEs from across Europe, helping them establish synergistic partnerships with large companies, public entities, and research organisations. We focus on 3 key thematic areas:

- Circular cities,
- Bioeconomy, and
- Blue economy.

This vision paper provides a concise overview of Digitalisation for circular innovation, and the approach of the DigiCirc project to promote it. Specifically, we:

i) analyse the main drivers that will spark the Digitalisation of European Circular Economy,
ii) propose the vision of the DigiCirc ecosystem,
iii) provide the general approach and framework for engagement of key stakeholders to create and animate the ecosystem.



1 Rationale – Why is digital circularization important?

1.1 The transition to a Circular Economy is critical

European economic prosperity is underpinned by mechanization, mass production, automation, and other **industrial paradigms**.

Globalisation of these paradigms has led to millions around the world being lifted out of poverty, and to better global living standards. Industrialisation **has both driven and answered to growing global demand for goods/services**: food, water, electricity, transport, construction materials, and everything else.

However, contemporary industrial paradigms **are based on a linear model of production:**

take → make → use → dispose

Increasing production directly results in an expanding environmental footprint, and increased greenhouse gas emissions.

The global economy will continue to grow, as will human population – by up to 11 billion by 2100[i].

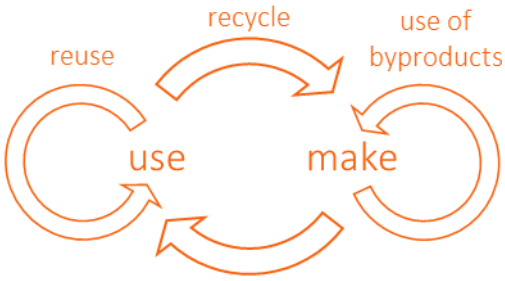
If everyone consumed like the average citizen of the European Union, we would need 2.8 Earths[v].

How will we feed, clothe and supply the world without destroying the environmental systems on which we rely?

A pivotal change is needed to break the dependence of industrial production and economic growth on resource extraction, pollution and emissions.

The Circular Economy offers a solution

as a fundamental alternative to the linear model of production:



It aims to decouple economic activity from the consumption of non-renewable resources as well as associated pollution/emissions.

In the Circular Economy, what is today labelled as *waste* is recognised to contain materials and energy that is valuable as an input for other industrial value chains.

Waste streams should be harnessed and used productively – *one company's "waste" output is another's input; one person's non-use should enable another's use*.

The transition to a climate-neutral and resource-efficient economy is one of Europe's (and the world's) largest challenge.

The Circular Economy provides a framework to transform the economy and meet these ambitious and vital objectives.

Key tenants of the Circular Economy

1. **Design for circularity** at the conceptual level
2. Use renewable materials & energy
3. Use resources & energy **more efficiently**
4. Use **by-products as input** for other productive processes
5. Extend the useable life of products
6. **Recover materials** at the end of a product's lifecycle

1.2 Europe's current Circular Economy is significantly below its potential

The Circular Economy is a *relatively* new concept. Nonetheless, **the sector is mostly composed of traditional activities**: repair and maintenance of vehicles, machinery, furniture, computers, etc. and recovery and handling of sorted materials (recycling).

This is 90% of the current European Circular Economy[vi], **limited to sectoral and geographical silos and focused on "individual/isolated parts of value chains"**[vii].

Clearly, this picture is significantly below the potential of the Circular Economy, and the range of business activities that can valorise materials, energy and underutilised resources.

The reason for this is that circular business models, business processes and services/products are challenging to provide.

Key enablers that promote circular transition include: policy, finance, (bio)technology, infrastructure and logistics, skills and knowledge, standardisation, and digitalisation.

1.3 How digitalisation can fast-track development of the Circular Economy

Digital technologies – for example, track & tracing, artificial intelligence, the Internet of Things, edge computing, novel sensors, 5G, etc. – are *key enabling technologies* for the Circular Economy.

This view is shared by various experts, as published by: EIT Climate KIC, DigitalEurope, the European Commission, Accenture, Deloitte, Ellen MacArthur Foundation, World Economic Forum, Club of Rome, and others.

Simply put, these technologies provide actionable information (see box below) that **help businesses design circular business models, circular business processes and circular products/services**. They also help keep circular operations running smoothly.

The aim of circular transition is to restructure the current economy across the local, European and international levels. **Due to high complexity, implementing circularity in practice is not easy to achieve**.

Digitalisation is system-level catalyst for the Circular Economy which breaks down complexity and facilitates industrial linkages.

The DigiCirc Ecosystem seeks to interlink current and future participants in the Circular Economy on the European level and provide them with innovative solutions to draw on underused value within their value chains.

Digitalisation for the Circular Economy in a nutshell

Digital technologies:

- Collect and/or generate data,
- Process and analyse this data, and
- Present actionable information.

For the Circular Economy, this includes tracking and tracing of the:

- location,

- quantity,
- availability and
- specifications

of material/energy flows, possibly in real-time.

In turn, this information can be used:

- *Internally*, to deliver actionable insights – strategic and operational;
- *Externally* with other companies, **creating awareness of waste streams as well as facilitating collaboration and linkages** across a potentially large network of economic actors;
- *Externally* with consumers, to support responsible consumer choices.

When these are applied in real life, Digitalisation supports actualisation of the Circular Economy, strengthening:

- **Management of complex circular logistical chains**, including by improving efficiency of energy and resource use;
- **Traceability**, with companies and consumers alike;
- **Sharing platforms,** linking need and availability of goods for sharing, renting and leasing;
- Exchange for repairing, upgrading and reselling items, extending product life.
- **Product-as-a-service** business models dependent on a stream of data (wherein a company retains full ownership of materials, e.g. lighting-as-a-service rather than a lightbulb).

Without Digitalisation, these would be difficult to scale beyond a local level, much less on a European and global level.

"For the first time, we have the opportunity to scale up Circular Economy business models swiftly and widely to put us on course for a more sustainable future"

EIT Climate KIC, 2019[viii]

1.4 EU policies support both circular transition and Digitalisation

In 2019, the European Commission defined 6 political priorities for the next 5-years.

This includes the European Green Deal[ix], a roadmap for the future of European economy in terms of sustainability and innovation.
It aims to make Europe:

- Climate-neutral by 2050
- Zero-pollution and toxic-free
- Efficient in the use of resources

These ambitious goals **display the commitment of the European Commission** to make the European Union's economy sustainable. Achieving it will only be possible by turning climate and environmental challenges into business opportunities across sectors and regions, and further implementing policies that enable such shift.

The European Commission intends to **mobilise industry, as well as other actors in research and innovation** to this end. It also commits to help finance the circular transition.

To guide this effort, the European Commission defined the Circular Economy Action Plan[x], including a sustainable products initiative and particular focus on resource intense sectors such as textiles, construction, electronics and plastics.

This plan aims to accelerate the transformational change required by the European Green Deal, while building on earlier Circular Economy actions implemented since 2015.

Transition to new production paradigms and making these ambitions a reality requires the widespread adoption of enabling technologies.

As such, another of the 6 priorities of the new European Commission is: A Europe fit for the digital age.

Under this priority, A new Industrial Strategy for a globally competitive, green and digital Europe[xi] was defined, compatible with the Circular Economy Action Plan.

Between these two documents, the European Commission **directly recognises Digitalisation as an essential enabler of circular transition**. It allows European industry to be:

- more productive,
- more integrated,
- more smart and efficient,
- to make evidence-based decisions, and
- to share key information to consumers and across value chains

1.5 Drivers for Digitalisation of the Circular Economy

Technology	Market	Policy	Knowledge
• *Gives access to a large basin of customer* • *Improve energy & resource efficiency*	• *Increased focus on resource optimization* • *The customer becomes a supplier*	• *Pro CE policies enable market expansion* • *Waste regulations simplify CE business models*	• *Cross-disciplinary knowledge as main pillar for CE* • *Investors and funders as source of knowledge*
BARRIERS			
• *Complicated to obtain resources data, especially from local authorities*	• *A shift in customer behavior requires effective marketing campaigns*	• *Lack of capital flows and public awareness about CE thematic*	• *Cross-disciplinary knowledge and expertise results very expensive for small companies*

The European Institute of Innovation & Technology's (EIT) Climate KIC[viii] identified **4 key drivers for the Digitalisation of the Circular Economy:**

- technology,
- policy,
- market structures, and
- skills.

Together, they enable system innovation towards circularity, through the development and uptake of digital solutions.

Technology

Digital solutions revolutionise service and flexibility, facilitating the flow of products and services between the producers and users at any place and time.

Digital technologies have enabled and facilitated the flow of data, information, resources, and materials between producers and users.

The availability of data is key to optimise flow and traceability of material and resources, providing information about user habits (e.g. type and quantity of waste, type and amount of food purchases) or

product lifecycle data (e.g. origin, component lifecycle stage).

Although plenty of data is available, acquiring it can be complicated, especially for SMEs. Buying or collecting data can be time-consuming, resource-intensive and expensive

Also, data from public institutions (e.g. municipalities) is difficult to gather and use because collection and dissemination methods differ by institution, region and country. This limits their potential for circular applications.

Finally, SMEs are often not aware of the opportunities offered by existing solutions and are missing opportunities to improve data collection and scale up their current operations as a result.

Market

On the demand side, there is rising interest in circular products and services, with an increasing focus on resource optimisation and the sharing economy. Some examples are:

(i) the clothing industry where consumers require more and more materials that are either recycled or produced using little natural resources,

(ii) packaging that users request to be durable, biodegradable, and consisting of recycled fibres, and

(iii) second hand market that shows a growth in last years, with consumers again interested in repairing, maintaining or buy already used products rather than new ones.

Nonetheless, **circularity demands a holistic change in conventional consumer behaviour, because the customer is involved in circulating the materials back into the market after their consumption**. From here arises the importance of consumers to become suppliers.

From the companies' side, every SME must understand the adoption patterns of its target customers – how willing they are and how fast they will be to adopt new products and services. Several start-ups have said that they have had to balance their own ambitions with the reality of the level of adoption they see from their customers.

For the Circular Economy to make a real impact, sustainable products and services must be competitive on price, quality and convenience. They must also be scalable, so more consumers can easily adopt circular consumption and usage patterns. It is crucial to achieve these criteria otherwise consumers lack enough incentive to change their behaviour.

Policy

Sustainability has become a key part of the global agenda, a fact reflected by the creation of the UN Sustainable Development Goals and the ratification of the Paris Agreement.

Policy and regulations adopted by countries and regions will critically shape the potential of Circular Economy. Supportive political environment for circular models, for example, could increase capital flows and public awareness; while over-rigid regulation could leave start-ups without the flexibility to try better circular models.

Regulation complexity tends to not accommodate circular business models or new digital solutions. For SMEs, simply determining what regulation applies to their venture can indeed be a challenge.
Ratification of EU regulation that enhances circularity – for example by promoting the looping of materials through waste regulations – will be crucial. This will be further simplified by Digitalisation that has made compliance with regulations smoother.

Finally, there is a clear need for economic instruments which target those developing circular business models and reward them through tax relief or other benefits. Conversely, tariffs or higher taxes could be imposed on businesses which stick to wasteful, linear models.

Skills and Knowledge

The right technology, market structures and policies are essential for digital/circular businesses, but access to the right skills and resources is equally important.

Our partner clusters represent useful networks of SMEs and innovation enablers, granting access to knowledge and skills to support business development.

Investors and financiers are more than a financial source, they can also provide useful guidance and access to their own networks and partners.

Professional partners and academic institutions are also valuable.

Barriers to innovation will occur when cross-disciplinary knowledge and skills are hard to find.

2 Joint DigiCirc Ecosystem vision

The transition to a European Circular Economy is a complex process that requires a coordinated effort among key stakeholders of various industries and sectors.

To leverage Digitalisation, an additional layer of technical expertise must be engaged and involved.

DigiCirc is a pan-European project that aims to support digital innovation for the Circular Economy.

To ensure impact, **the project will bring together and animate a DigiCirc Ecosystem** – a European open innovation network of SMEs, industry, researchers, public entities to foster digital circular innovation.

The Ecosystem will be **established across 3 thematic areas**: circular cities, bioeconomy & blue economy. **Key activities during the project will involve the Digicirc Ecosystem:**

Define circular challenges for each thematic area	Create a DigiCirc accelerator for each thematic area	Create & promote key assets for circular innovation	Analyse and disseminate knowledge
together with Ecosystem Clusters and experts from the Ecosystem	SMEs innovation is supported by other Ecosystem participants	to support Ecosystem actors for circular innovation (data, web-courses, tools, etc.)	through comprehensive reports prepared with and for the Ecosystem

While the DigiCirc Ecosystem provides fertile grounds from which innovation will sprout, additional activities of the DigiCirc project will cultivate these conditions to optimise results.

The project is briefly summarised in the infographic on the next page.

Circular innovation will still be needed after the end of the project – the rationale described in this document will unlikely be fully addressed in 3 years.

We see the project as a launchpad for European coordination for circular innovation, and we aim to ensure continuity of network and innovation support for Ecosystem members beyond the lifetime of the project. This will likely include:

- Direct uptake of project assets and results by clusters to promote their own circular digitisation
- Providing data, tools and web-based courses on a free and open basis as much as possible, and ensuring accessibility
- Identify which initiatives and activities would be useful based on consultations with Ecosystem members
- Finding initiatives with which to merge, or new sources of funding if deemed useful by the Ecosystem.

We look forward to discussing the future of DigiCirc with you, and working together to support a better future.

Making sure footprint saved doesn't lead to footprint made

Solving a problem is not very useful if it is replaced by another.

Digital technology is well-known as the *7th continent in terms of energy consumption* and will be the *top electricity consumer in the world by 2030*.

We will also work with SMEs and assess digital solutions with regards to their footprint in addition to their impact, and help them fully fit into the Circular Economy. This includes assessing opportunities for efficient coding, opting for cloud servers running on renewable energy, operational and procedural measures, etc.

3 DigiCirc Ecosystem thematic areas and the role of its members

3.1 The DigiCirc key thematic areas are ripe for circular innovation

The **Ecosystem will span across 3 strategic high-growth thematic areas** where the potential for digital-driven Circular innovation is recognised but not realised.

The thematic areas are wide and inclusive grouping, involving several emerging and established industries.

Circular cities

72% of EU citizens live in cities[xii], which consume 75% of natural resources, are responsible for 60-80% of greenhouse gas emissions and produce over 50% of waste[xiii].

It is urgent for cities to adopt circular systems to increase efficiencies, lower their environmental footprint and minimise health-costs to citizens.

Digital technologies have already shown potential to enable sharing economy business models[xiv], improve logistics[xv] and lower waste.

Circular cities are identified in the Circular Economy Package and the Urban Agenda for the EU. Emerging industries include waste management, mobility, renewable energy, logistics, urban agriculture, etc.

Bioeconomy

EU's ambitions to become the world's first carbon-neutral region by 2050[xvi] will require a switch from an economy dependent on fossil raw-materials to a bioeconomy, harnessing the production and processing of renewable raw materials.

The bioeconomy is already a large EU sector, with a turnover of €2,3 Trillion and employing 8,2% of EU's workforce[xvii], and has potential to create a million new jobs by 2030[xviii].

The European Commission recognises it as a key strategic sector[xix] for a competitive and sustainable economy of the future which can enable the Circular Economy [xx] . European Commission's Bioeconomy Strategy explicitly recognises the role of digital innovation to support this transition.

Blue economy

EU's Blue Economy has a turnover of €566 Billion, generating €174 Billion of value-added [xxi] and employing nearly 5 million people[xxii].

The seas cover 70% of the earth's surface and are vastly unexplored and underutilised. Further growth across a number of areas identified in EC's Blue Growth Strategy, by which it seeks to support sustainable growth in the maritime sectors.

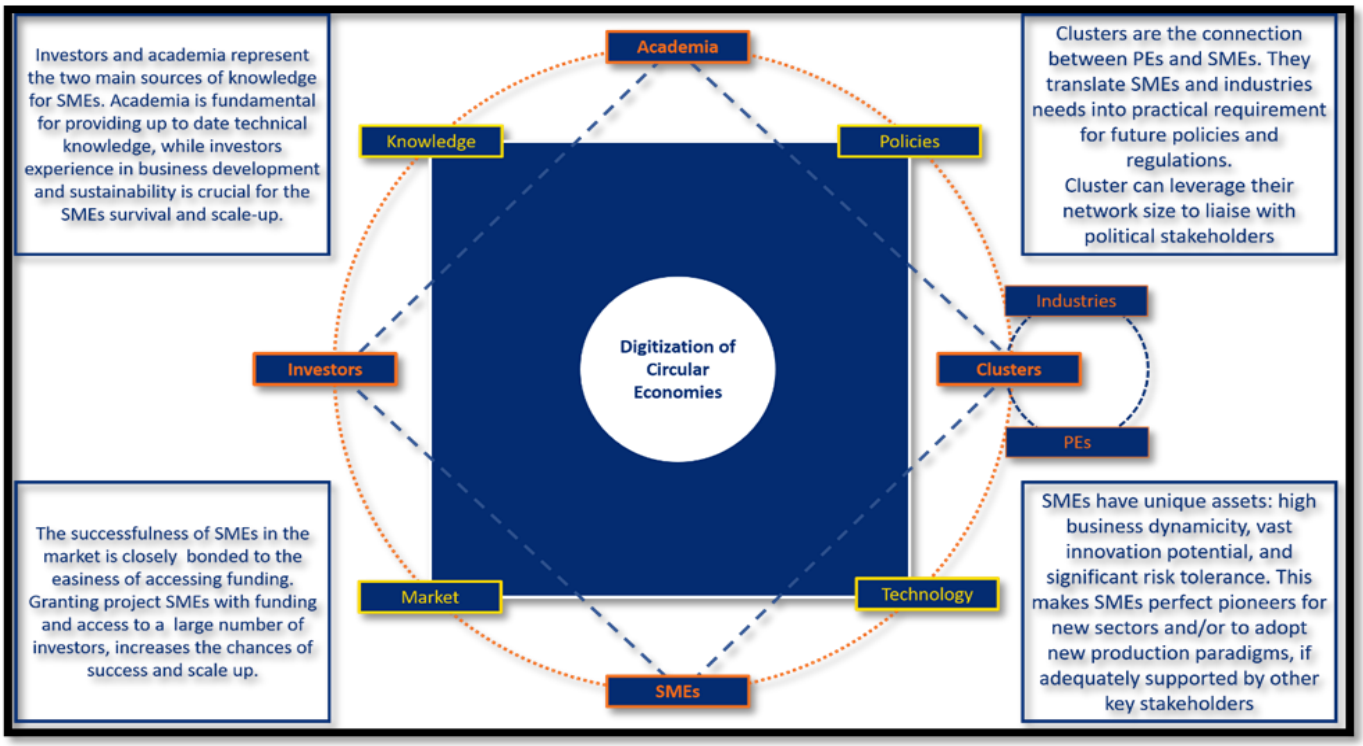
One of the focus areas of the Strategy focuses on the development of a particular approach for maritime resources which is compatible with the goal of a Circular Economy, and for which ICT is directly identified as an enabler.

ICT allows for synergy and linkages across established sectors such as fisheries, logistics, tourism as well as new emerging ones such as aquaculture, blue biotechnology, tourism 4.0 & ocean energy.

3.2 The DigiCirc Ecosystem has different roles for different stakeholders

Realising the DigiCirc Ecosystem Vision requires active interaction among a critical mass of key actors to create an open innovation ecosystem for a digitally-drive Circular Economy.

In this section we describe the profiles we will target and their synergistic roles in the Ecosystem.



Clusters

As defined by the European Commission[xxiii], clusters are "regional ecosystems of related industries and competences featuring a broad array of inter-industry interdependencies". They comprise "groups of firms, related economic actors, and institutions that are located near each other and have reached a sufficient scale to develop specialised expertise, services, resources, suppliers and skills".

Clusters play a crucial role in strengthening their stakeholders' innovation capacities. This approach is particularly effective for SMEs that cannot internalise the full spectrum of innovation management.

The added value of innovation management in a cluster environment is twofold:

(i) a vertical expansion of the focus sectors created by overlooking at entire value chains and

(ii) a horizontal expansion of the focus sectors, by reaching the critical mass/market share through the number of cluster members.

Furthermore, cluster initiatives can leverage their size and influence to develop economies of scale and liaising with political stakeholders.

In the case of circular economy and digitalisation, where a complex set of linkages across value chains is fundamental to scale up business, clusters play a key role in enabling matchmaking among stakeholders, experts, and innovation actors.

Therefore, the **DigiCirc Ecosystem places clusters at the centre of its Ecosystem Vision, where they will act as networking nodes**, granting linkages with a large number of the other innovation actors in their region as well as with other clusters. In turn, this will allow the Ecosystem to facilitate cross-sectorial and cross-border linkages across the network to promote collaboration for circular innovation.

The DigiCirc project, and as such the Ecosystem, is cluster led. Each of the 3 clusters in the DigiCirc team lead a thematic area related to their core expertise.

They will lead regional and international outreach to bring together a large number of innovation actors in order to foster the Digitalisation of Circular Economy.

SMEs

Small and Medium Enterprises (SMEs) represent over 95% of the companies in the 3 DigiCirc thematic areas.

SMEs have unique assets, including:

- high business dynamicity,
- vast inherent innovation potential, and
- significant risk tolerance.

These attributes **make SMEs perfect pioneers for new sectors and/or to adopt new production paradigms**.

DigiCirc will provide over 90 SMEs with access to:

- 0-equity grants,
- business and technical knowledge, and
- a European network to possible partners and clients.

As such, it will help SMEs unleash their potential in developing leading-edge digital solutions that will contribute to the growth of the European Circular Economy.

SMEs are the core beneficiaries of the DigiCirc accelerators. They will form a large pool of dynamic and agile innovation actors, perfect suitable for market-driven experimentation, in the Ecosystems, and will interact with and draw on the assets of other innovation actors in the ecosystem.

Investors

Disruptive changes in the production paradigms offer conspicuous & profitable opportunities for investors.

In turn, external financing and venture capital **help SMEs unlock resources to expand and scale by unlocking financial resources and also non-financial resources** (business and innovation management experience, commercialisation expertise, the investor's network, etc.).

The DigiCirc team will reach out to and involve the European investor community, with this effort led by FastTrack VC, an international innovation investor company.

Public Entities

Public Entities (PE) include public agencies, institutions and authorities on the regional, national, and European level.

PEs **play a central role in a digitised Circular Economy**:

- They **regulate relevant policies and procedures**. For example, waste disposal and handling which affects the permissibility and manner of using material flows for circular purposes.
- They **control access to primary and secondary resources**, including for example forests, recycling programmes, etc.
- They have a treasure trove of relevant data.
- They are **well-placed as networking nodes**, to bring together innovation actors and to define key issues which they themselves can be a significant customer for.
- They can define key issues relevant to their administrative work and, in turn prove a large customer for innovative solutions.

Therefore, it is crucial to involve PEs in the Ecosystem as **networkers, partners, end-users and generally as active stakeholders**. Clusters will ensure involvement and liaison in their regions.

Research and academia

Science is a fundamental building block to boost the shift from linear production models to circular economies.

The DigiCirc Ecosystem aims to involve researchers as both:

- ***A spark for innovation***, providing the ideas and proofs of concept that can be the basis for new solutions.
- ***Partners in innovation***, knowledge and equipment for systematic research and out testing of new solutions for recycling, upcycling and productive use of secondary material productions – all the way from lab to relevant experimental environments.

The DigiCirc Ecosystem will facilitate matchmaking between research organisations and the innovation efforts led by SMEs. Research organisations can provide highly specialised expertise as well as to provide testing capacity.

Mid-caps & large companies

Corporations and large companies suffer negative consequences if their response to changes in the market are slow or inadequate.

In last decades more and more corporations have started to acquire SMEs and start-ups to "in-source" innovative ideas and solutions rather than to initiate internal development.

This represent a unique funding opportunity for SMEs in the field of Circular Economy. It also provide them with direct access to secondary resources, to knowledge and data, and can provide the value chain and customer base to widely-deploy novel solutions – as such, they are also valuable potential partners.

In the DigiCirc Ecosystem, mid-caps and large companies are **potential partners, potential investors, and potential customers** for innovative solutions. They have **intrinsic knowledge of sectoral problems and status**, as well as direct linkages in the value chain, and will help define priorities which innovative solutions should target.

4 Ecosystem genesis: Our engagement framework

To build the Ecosystem, the DigiCirc team will reach and involve a large number of Ecosystem participants of different profiles through **Engagement campaigns**.

The Ecosystem delivers direct benefits to those involved, realised through cooperative synergy.

This section describes these aspects in detail. They are critical to achieving momentum and boosting cross-European circular innovation.

4.1 Why you should get involved

Leveraging these campaigns, we provide **strong benefits for different stakeholders to be involved in the Ecosystem**. This includes both indirect motivation, esteem to contribute to the Digitalisation of the Circular Economy in their sector of interest, as well as a number of direct incentives:

Clusters

- ▶ Join the DigiCirc Ecosystem to support circular innovation in your region.
- ▶ Help us define the key challenges in the key thematic areas, which we will help Europe's innovative SMEs address, with resulting solutions benefiting your regional economy.
- ▶ Spread the open calls among your members to ensure innovation reaches your region.
- ▶ The more you get involved, the higher the possibility to receive travel grants to attend the DigiCirc pan-European Meetings for the thematic areas, and our DemoDays.
- ▶ An Ecosystem shares: we will share the tools we develop, our course materials & insights gained.

SMEs

- ▶ Do you have good & innovative ideas in the DigiCirc thematic areas?

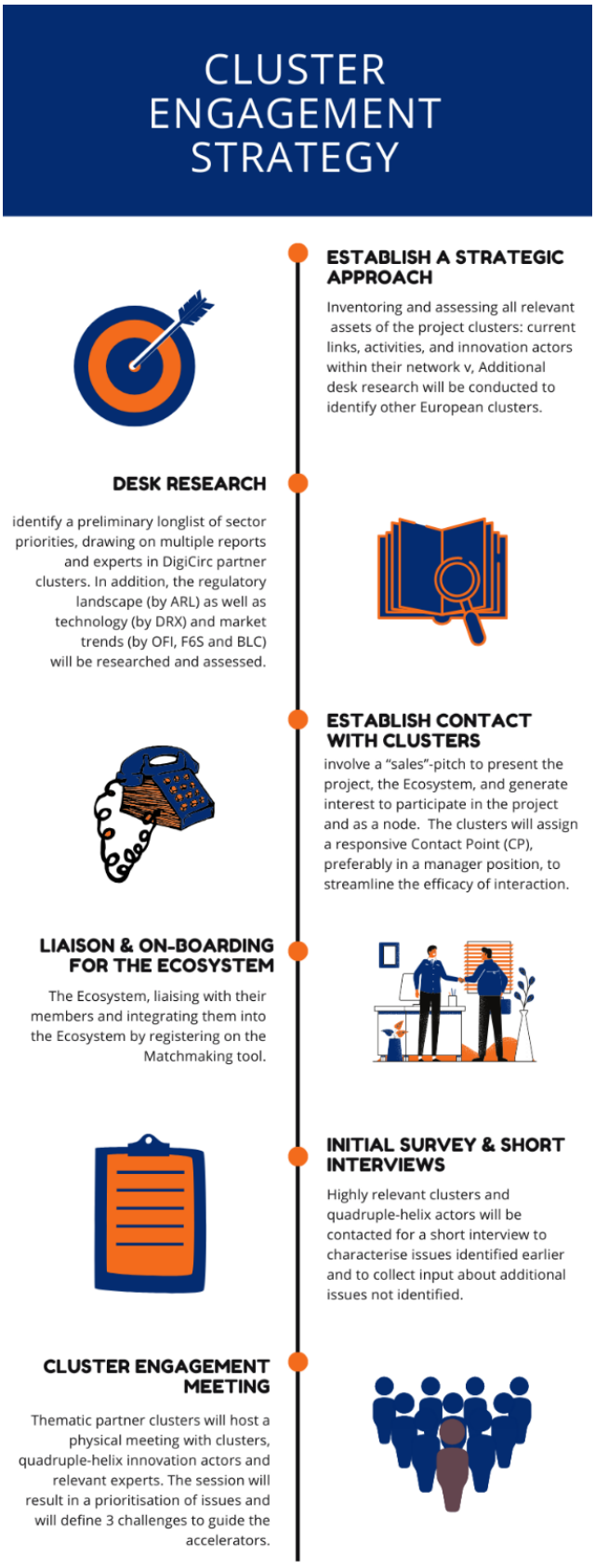
Join our intensive accelerator to access a range of resources that will transform your innovation from early development to the foundations for a robust business.

We provide extensive 1-on-1 coaching, a training programme, and connections to useful partners to help your innovation effort. We provide 0-equity funding.

- ▶ The DigiCirc Ecosystem allows you to connect with a range of innovation actors across Europe to support your innovation & commercialisation.

Investors	▶ Gain premium access to highly promising circular SMEs from across Europe, handpicked and supported by our EU-supported accelerator to turn their innovations into game-changers.
Academia	▶ Join and support market-oriented circular innovation to collaborate with future-shaping SMEs, testing your insights and research results in a large-scale operational context.
Industry	▶ Cooperate with DigiCirc SMEs to bring agility into your organization, testing new products and markets. ▶ Find the ideas, skills and expertise to solve business challenges related to resource supply or material disposal, or to create new value from underutilised resources/energy in your supply chain. ▶ Leverage innovative ideas to lower your environmental & CO_2 footprint to help meet your internal climate and CSR pledges. ▶ Gain a competitive edge in a market where climate-neutrality is becoming a major asset.
Public Entities	▶ Help us define key waste issues and inefficiencies across your jurisdiction to have our Europe-wide innovation teams try to solve them. ▶ Connect to and work with innovative SME-led teams to work specifically on your key challenges. ▶ We will provide you with key insights from across the continent, including awareness of conducive and best-practice policies and procedures, and needs and requirements regarding regulations (or de-regulations) expressed by other actors in the Ecosystem.

4.2 The DigiCirc Cluster engagement campaigns



DigiCirc is a **cluster-led project**, endorsing the definition of clusters and umbrella organisations as network engines.

They represent **the perfect instruments to reach and engage a large number of cross-regional, cross-sectoral market representatives** from industry, research organisation, and REs, and in turn to capture their needs and participation in the accelerator activities.

Cluster engagement will be led by DigiCirc partner clusters, each for their respective thematic area.

5 Next steps and beyond

The DigiCirc project will be implemented in 32 months, starting in May 2020 to December 2022.

The key activities to be implemented in the period to bring together and activate the DigiCirc Ecosystem include the following:

- The DigiCirc project will launch 3 engagement campaigns to involve clusters from the 3 thematic areas, defining key sectoral challenges.
- Engaged clusters will help onboard academia, SMEs, large companies, civil society organisations and public entities, thus building the Ecosystem.
- Members of the Ecosystem will partner with innovative SMEs across Europe for the DigiCirc accelerators, using the DigiCirc matchmaking tool.
- DigiCirc DemoDays will be high-level meetings showcasing DigiCirc innovation results to which Ecosystem members will be invited to.
- The project will make available, on a free & open basis, its tools, MOOCs, data, key insights and other information for uptake in the Ecosystem.
- The DigiCirc sustainability team will consult the Ecosystem and prepare a roadmap to set-out what the Ecosystem will look like post-project.

It is our ambition to ensure that the project is launchpad for coordinate European innovation in the Circular Economy.

Circular transformation is a long-term process, and as long as it is ongoing, Digitalisation and innovation support will be systemic catalysers.

We aim to ensure the post-project continuity of the Ecosystem, in whole or in part, to **ensure a more rapid and complete move to a carbon-and environmentally-neutral European society**.

References

i. United Nations, Department of Economic and Social Affairs, Population Division, (2019). **World population prospects: The 2019 revision**. URL.

ii. Global Carbon Budget (2018). **Global Carbon Budget 2018**. Earth Syst. Sci. Data, 2018b. URL.

iii. Geyer, R., Jambeck, J. R., & Law, K. L., (2017). **Production, use, and fate of all plastics ever made**. Science Advances, 3(7), e1700782. URL.

iv. Vaclav Smil, (2017). **Energy Transitions: Global and National Perspectives**. BP Statistical Review of World Energy. URL.

v. Global Footprint Network, (2019). **EU overshoot day: Living beyond nature's limits**. URL.

vi. European Cluster Observatory, (2017). **Priority sector report: Circular economy**. URL.

vii. Deloitte, (2018). **Circular goes digital**. URL.

viii. Climate KIC, (2019). **Digitalisation – Unlocking the potential of the circular economy**. URL

ix. European Commission, (2019). **The European Green Deal**. COM(2019) 640. URL.

x. European Commission, (2020). **Circular Economy Action Plan**. COM(2020) 98. URL.

xi. European Commission, (2020). **A new Industrial Strategy for a globally competitive, green and digital Europe**. URL.

xii. PBL, Netherlands Environmental Assessment Agency, (2016). **Cities in Europe**. URL.

xiii. UN Environment, (2017). **Resilience and resource efficiency in cities**. URL.

xiv. World Economic Forum, (2017). **Collaboration in cities: from sharing to sharing economy**. URL.

xv. Taniguchi et al., (2015). **New opportunities and challenges for city logistics**.

xvi. European Commission, (2019). **A Green Deal for Europe**. URL.

xvii. European Commission, (2018). **A sustainable Bioeconomy for Europe**. URL.

xviii. EuropaBio, (2016). **Jobs and growth generated by industrial biotechnology in Europe**. URL.

xix. European Commission, (2018). **The bioeconomy strategy**. URL.

xx. European Landowners' Organization, (2018). **The challenges of producing less with more**. URL.

xxi. European Commission, (2016). **DG MARE Blue Growth Strategy and Actions**.

xxii. European Commission, (2014). **Innovation in the Blue Economy: realizing the potential of our seas and oceans for jobs and growth**. URL.

xxiii. European Commission, (2016). **Smart guide to cluster policy: How to support SME policy from Structural Funds**. URL.

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