

ORCHESTRATORS

DEFINING THEIR KEY ROLE IN SHAPING BIOBASED REGIONAL TRANSITIONS

FOREWORD

The transition to a circular and sustainable economy in the North Sea Region relies heavily on the adoption of biobased materials. Utilizing these materials in the construction sector offers not only environmental benefits but also opportunities for innovative value chains and economic growth, also in rural areas. The BBoBB project focuses on strengthening and scaling these value chains through regional and international collaboration.

A previous report aimed to map and analyze regional biobased value chains and gave insights that contributed to the development of robust and well-functioning value chains. One such contribution is the insight in the role of the orchestrator. Orchestrators are essential for developing, strengthening and scaling these value chains

The insight articulated in this report are based on experiences of project partners before, during and after mapping biobased value chains and informed by a short literature review (see attachment).

This report presents a definition of a BBoBB orchestrator. It provides a resonating description of these actors that are essential to biobased value chains that can be used to identify BBoBB orchestrators and to inform the design of resources to further support BBoBB orchestrator in their important role.

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A BBOBB-ORCHESTRATOR DEFINITION

Within the BBoBB project, developing and strengthening biobased value chains is the central subject. Orchestrators are essential actors within biobased value chains, but there are many ways to interpret this role. Due to the complexity of the role, a simple definition would not do the role justice. Therefore, the following description is used as a 'definition'.

HOW TO DESCRIBE AN ORCHESTRATOR?

Besides directing different groups musicians in a musical piece keeping all in tune, the title is also linked to the connector of stakeholders within an ecosystem. In general, the role is not that different. Linking the strings, to brass and percussion to form a whole in harmony. This

orchestrator does not play each instrument, but ensures that everyone is on the same sheet of music and keep the same rhythm.

A biobased ecosystem orchestrator needs the same soft skills to be able to link all stakeholders, each with a different culture, background and language.

A biobased ecosystem orchestrator is a central, proactive entity that connects, aligns, and drives collaboration among diverse stakeholders across the biobased value chain, from raw material producers (like farmers or forestry) to researchers, industry players, policymakers, and end-users.

Their role isn't to own the ecosystem, but to facilitate its functioning and growth by ensuring that all the parts of the system, economic, environmental, social, and



regulatory, move in sync toward shared goals like circularity, biodiversity, sustainability, and innovation.

Much has been written about the role of an ecosystem orchestrator and what qualities are required to achieve alignment and enhance a shared value proposition. Orchestrators must possess the knowledge, expertise, and legitimacy to guide a complex web of actors toward collective, long-term goals. One of their key responsibilities is to coordinate and manage diverse interests, ensuring consistent alignment across a fragmented ecosystem.

In the context of BBoBB, the role of the orchestrator goes further. It adds something essential and urgent. At the heart of the BBoBB approach lies a response to pressing social and planetary challenges like climate change, resource depletion, human exploitation, and biodiversity loss. The orchestrator in BBoBB is not driven by self-interest, but by the imperative to act. The urgency of change is what fuels their commitment.

IMPACT-DRIVEN AND SYSTEM-THINKING

Above all, the BBoBB orchestrator is defined by impact-driven action. They are not just facilitators, they are catalysts for systemic change. Building economically sustainable biobased value chains in regions requires a paradigm shift: actors must step out of habitual ways of thinking and working. The orchestrator plays a critical role in enabling that shift.

They understand the entire biobased value chain, from biomass production to end-use applications, and they are fluent in the different “languages” of the chain’s links,

whether scientific, industrial, political, or social. They are sensitive to the unspoken assumptions that shape decisions and behaviors, and they possess the agility to zoom in and out, shifting focus from granular detail to the broader system landscape.

The BBoBB orchestrator is:

- An inventive thinker, able to see connections others might miss.
- A connector, bridging worlds from policy to practice, from the mayor’s office to the farmer’s fields.
- A hands-on, proactive, and not afraid to venture down unexplored paths.
- An inclusive leader, with the wisdom to know when others are better positioned to lead and the humility to support them.

Because their actions are purpose- and impact-driven, they gain trust and engagement from others. People are willing to follow them, not because they command authority, but because they embody authentic commitment to change.

MORE THAN A CONDUCTOR

While the term “orchestrator” often evokes the image of a conductor, the BBoBB orchestrator is also the composer, roadie, and stagehand. They don’t just harmonize what exists, they imagine and assemble entirely new arrangements, rooted in circular, inclusive, and regenerative values.

In short: the BBoBB orchestrator isn’t just helping the ecosystem work, they’re helping it work differently, and for the better.



ATTACHMENT

To manage its complexities, an ecosystem often relies on an orchestrator company [1]. An ecosystem is a set of interdependent actors that collectively contribute to deliver value with a need to interact with each other, in order for value propositions to materialize concerning systemic innovation [2-4]. A key role of an ecosystem orchestrator is coordinating and managing different interests and ensuring alignment between ecosystem participants [5]. Activities, actors, positions and links all need to be aligned to enhance the value proposition.

To achieve this alignment standardization, nurturing and negotiation mechanisms are recommended [5]. Standardization is often credited as a necessity for successfully integrating a circular economy within an ecosystem by setting industry standards [5-6]. Nurturing can be achieved by paving the way to funding, but it also involves openness towards sharing core knowledge. Lastly, ecosystem partners may have inconsistent incentives, making negotiating important for a broker to incentivize emphasizing each other [5]. The orchestrator can facilitate communication between members and supports the creation and sharing of value [7]. Nevertheless, it should not have complete hierarchical control [8]. By supporting the social relationship, various perspectives and expertise can be brought together [9-10].

These points were partially tested in a recent Master's thesis where 19 people active within the Frisian ecosystem were interviewed [11]. The necessity of standardization remains debated. Some argue that applying lessons learned allows for a structured learning curve, making processes more efficient over time. A standardized approach can also lead to clearer expectations from the outset, particularly when working with public institutions. This can facilitate market adaptation and improve coordination across different organizations. Conversely, others caution against excessive standardization, suggesting that imposing uniformity can be restrictive, especially for smaller entities with distinct operational needs. Rigidity may raise barriers and increase complexity, making systems less adaptable. Some highlight the risk that overly standardized approaches could suppress flexibility and hinder unique contributions within collaborative projects [11]. Access to funding is frequently highlighted as a critical factor for innovation projects, yet many participants lack the time or knowledge to explore financial opportunities. Orchestrators are often expected to bridge this gap by facilitating access to funding and forming key connections. Innovators are often not aware of the possibilities regarding funding. Without financial support, many collaborative innovation efforts face significant risks and may struggle to succeed [11].

Negotiation is another crucial element in collaboration. Differences in mentality and working styles can create

challenges, making negotiation a key tool in ensuring that all participants share a common vision. Effective negotiation helps prevent individual interests from overshadowing the collective goals of the ecosystem, fostering an environment where participants feel inspired and open to sharing ideas. Without such efforts, the risk of fragmented decision-making increases, potentially undermining the success of the collaboration [11].

There are varying perspectives on how systems should be managed within collaborative projects. In some cases, the supply chain operates as a cohesive unit, eliminating the perceived need for a central orchestrator, provided that all participants are equally engaged. In more complex scenarios with a higher number of collaborators, a designated orchestrator is considered essential to maintain coordination. A general principle suggests that greater complexity necessitates an increased level of oversight [11].

One perspective on orchestration emphasizes that an orchestrator acts as a supply chain coordinator, structuring and organizing different segments of the chain. An effective approach is to gradually decentralize control, distributing responsibilities among multiple orchestrators, each specializing in a particular area. This specialization fosters expertise and knowledge, which is often linked to successful management. The role of an orchestrator may also shift depending on the nature of the project, with some preferring to take a more active role at the beginning before gradually transferring responsibilities to other participants [11].

These points are supported by literature. Initially, the ecosystem is driven by one or several firm(s), which can be seen as the "initial orchestrator(s)". In single-orchestration ecosystems, the orchestrator wants to maintain control over the ecosystem and its partners. It is expected that initial orchestrators delegate tasks of orchestration to other firms in the ecosystem if they do not possess the necessary knowledge [12]. Orchestrators can play varying roles and change their role when needed [13]. The roles and activities orchestrators perform are different when the focus is on improving entrepreneurial success of network partners than when the focus is ecosystem-level output [14].

Literature defines various roles and names for orchestrators, but rather than focusing on the type it is more relevant to look at how they are organized [13-14]. An example of this classification can be found in Figure 1. In principle, any actor participating in the ecosystem can be an orchestrator, but they should have the resources to promote the collective goal and create higher overall value [15]. It makes sense that at an early stage, a single actor plays a distinctive role. Over time, as ecosystems mature, new actors join in and start to occupy a central position in

the ecosystem. Actors interested in driving the ecosystem will assume the role of orchestrators. By shared orchestration more investments value-added partnerships could be attracted, but it can also cause competition for resources or the leadership of the ecosystem [14].

To manage the ecosystem, either a top-down or bottom-up approach can be utilized. With a top-down approach, activities are designed with a blueprint and planned beforehand and the roles are subdivided [16].

With a bottom-up approach, ideas are generated by the ecosystem participants. In the Frisian context, there was wide agreement that a bottom-up approach is preferred, which should have top-down support [11]. The viability of a top-down approach also reduces when the system is more uncertain and complex [17]. This corresponds with the messy creation process of an ecosystem and consequently a bottom-up approach is recommended [16].

To summarize, the effectiveness of an orchestrator depends on the specific context, complexity and maturity of the ecosystem. To appoint an orchestrator, it should first be assessed what the complexity of the ecosystem is. In smaller, cohesive networks an orchestrator is not required if coordination occurs naturally between participants.

In larger, more complex ecosystems an orchestrator is essential to maintain alignment and structure.

Orchestrators should have the necessary resources, knowledge, expertise and legitimacy to guide the ecosystem towards collective goals. While centralized orchestration may be necessary at the early stages, a shift towards distributed orchestration can occur as the ecosystem matures. When this happens, clear mechanisms should be established to manage potential competition for resources and leadership roles. Whether centralized or distributed, the orchestrator must remain responsive to the evolving needs of its ecosystem to ensure long-term sustainability and value creation.

Figure 1: Findings of an empirical analysis in an entrepreneurial ecosystem [14].

Category	Role	Role-implementing orchestration capabilities
Facilitating: resources for participants	Opinion leaders	Are able to offer both tangible and intangible resources in the form of know-how, test labs, customer usability Based on their professional position are able to offer credibility and legitimacy for start-ups
	Business facilitators	Are able to see and offer new business opportunities Can offer legal support Are able to give advice for production
	Regulation informants	Are able to offer access to sales channels Capable of informing on regulation Know-how to support for medical certificate approval Can offer training (Also mutual support and learning from other companies in the same situation)
Creating prerequisites for collaboration	Relationship promoters	Are able to promote fairness and transparency Are able to build and promote formal/informal norms for collaboration Are able to bind contracts
	Coordinators	Capable of conducting and facilitating negotiations Must be capable of highlighting benefits of collaboration Are able to clarify roles and responsibilities
	Commanders	Capable of maintaining information flows Guide the construction of a network for competitiveness Capable of guiding production Capability to mobilize, highlighting benefits, promoting trust
Help in creating an offering	Integrators	Capable of maintaining production activities Capability to create holistic solutions for the customer Capability to integrate products and services aligned with customer needs Capability to maintain a connection with the customer Capability to maintain understanding by every stakeholder to see the entity
	Complementors	Capability to create complementary products and services for collaborators and integrators

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