

Co-creation in One Sea Ecosystem

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Knowledge transfer is in focal role in the co-operation of companies, research organisations, and other actors. However, in the core of an ecosystem is well-functioning co-creation that finally leads to enhanced competitiveness. One Sea ecosystem is a good example of a successful ecosystem. It strives to reach its global goals by supporting and enabling close co-operation of its members using well-functioning orchestration, supported by Business Finland funding. In the field of ecosystems, one main target and justification of public sector funding is to fill in systemic gaps and thereby support the emergence of significant new ecosystems that require simultaneous and parallel efforts from a wide range of actors.

From Knowledge Transfer to Co-creation

Knowledge transfer fuels competitiveness

The role of knowledge transfer as a competitiveness booster is evident in countries that have well-functioning university-industry co-operation practices. In these countries, effective knowledge transfer promotes the transformation of research findings into innovations. (OECD, 2019) Knowledge transfer between different actors of the innovation system include several formal and informal channels, which are focal in ensuring the effectiveness of co-operation and policy actions. Formal channels include collaborative and contract research, academic consultancy, intellectual property transactions, labour mobility and academic spin-offs. Informal channels of interaction include, for example, conferences and networking, facility sharing, and further education provided by universities to enterprises. Simultaneously, policy actions are shifting away from the linear short-term model of knowledge transfer between industry and research, and towards a more interactive, longer-term model of knowledge "co-creation" that involves multiple stakeholders from industry, civil society, research and government, and that additionally aims to solve wider societal challenges. Policy initiatives relevant to co-creation include joint research laboratories (e.g. CoLABS in Portugal); the two-way mobility of researchers across organisational boundaries (e.g. through industrial PhDs); the establishment of new intermediary institutions (e.g. Catapult Centres in the United Kingdom); and the development of new guidelines for intellectual property management.

OECD Co-creation TIP project offers toolkit from international viewpoints

The OECD Co-creation project examines the characteristics of co-development projects as well as policy implications. In co-development projects, information is generated in collaboration with business, research and other stakeholders, such as civil society. The final result of the project will be an interactive toolkit aimed at promoting information exchange, best practices and co-development. The 2019-2020 project will be led by the OECD's Innovation and Technology Policy (TIP) working group, followed by an extensive multinational steering group.

Finland participates in the OECD project by producing a case study and by participating in other project development work. The practical implementation is the responsibility of Business Finland's impact assessment team, which has prepared, in cooperation with other experts in the organization, a case study of the One Sea ecosystem. The case

Co-creation makes ecosystems successful

study reviews the practical organization of One Sea, its goals, ways of cooperation and the role of Business Finland in the ecosystem.

Ecosystems utilize same kind of channels that are relevant in knowledge transfer. These are spin-offs, collaborative research, patenting and licensing of university inventions, academic consultancy and business-to-business networking in various industry sectors. However, the step from knowledge transfer to co-creation creates more intense and complex linkages between actors from industry to research. It can be measured as ecosystems of continuous exchange, with revolving doors for newcomers and leavers. The level of competitiveness is high on those ecosystems who have well-functioning co-creation channels between research organisations and companies, and the ability to innovate and commercialize their products and services. But what are the impacts of these channels compared to the more traditional ones?

Policy interventions fix systemic gaps and build orchestration opportunities

In ecosystem policy, the justification for the interference and role the public sector is to address the so-called systemic gaps, where the emergence of significant new ecosystems require simultaneous and parallel efforts by a wide range of actors. No single actor has such a unique and broad business model that it would be able build the needed network, convince all network members of a shared vision of growth, and orchestrate a common agenda for change. The role of the public sector is to initiate and facilitate structural change that is valuable to this type of society.

Ecosystems create systemic effects and structural changes in the economy

Public funding for co-operation, facilitation of networks, and focusing R&D and innovation funding on ecosystems that are particularly promising to the national economy, will allow opportunities for structural change that would not otherwise occur. Many innovations are systemic in nature, and require complementary innovation, infrastructure, or products to support them. They may also involve network effects that do not directly benefit the companies making the initial innovation investment. The realization of systemic benefits requires coordination, which in practice rarely succeeds through the co-operation of purely private actors. At the same time, ecosystems increase the attractiveness of innovation environment as a location for R&D and innovation activities.

One Sea ecosystem seeks global leadership in autonomous vessels

One Sea aims to influence the global regulatory environment

Finland's innovation environment has numerous strengths in the global marine technology industry, which focuses on high-end ships, engines, propellers, and other marine equipment.

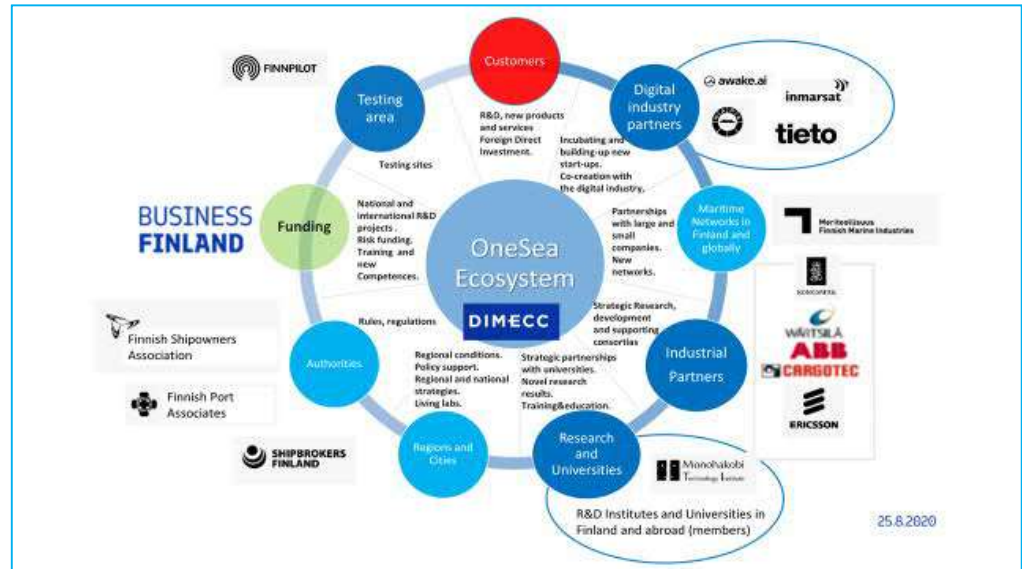
The very first goals of One Sea were to create common rules, a roadmap for reaching autonomous marine traffic, to dissolve legislative barriers, and to enable effective co-operation. The Finnish legal environment is progressive with regard to autonomous maritime transport, as it enables e.g. piloting autonomous maritime transport in Finland. However, the international regulatory environment is less permissive. One of One Sea's key goals is to influence the regulatory environment by working closely with legislative preparation both domestically and internationally. Currently, the ecosystem aims at creating an environment that, both in terms of legislation and technology, enables the autonomous maritime transport system by 2025. The scope of the ecosystem activities and impact targets are both international in nature.

One Sea partners

The One Sea initiative was set during the updating of the research agenda of the Finnish Maritime Industries in 2015. The ecosystem partners involve 10 firms (5 of which in

service industries, 5 in manufacturing), one research organisation, and one government agency. All partner firms operate in international markets.

One Sea has a wide scale of co-creation activities



Majority of the ecosystem partners are private companies, who have regular interaction with each other. The ecosystem is formally managed by a Management Board. The International Advisory Board focuses on maritime r&d issues and the National Advisory Board on company and government issues.

Business Finland's role is to offer orchestration support

The ecosystem is supported by the Business Finland funding instrument "growth engine" that provides funding for the orchestration of the ecosystem. Business Finland (and before that Tekes) has been involved in financing ecosystem development projects and orchestration. The aim of innovation policy is to help the ecosystem remain at the forefront of research and innovation in terms of maritime transport. In addition, the aim is to create a forerunner in a globally operating industry through research, development and innovation co-operation.

Management and IPRs

Orchestrator of the initiative is DIMECC (Digital, Internet, Materials & Engineering Co-Creation), a company co-owned by a 43 industrial and digital companies and 23 research institutes.

All IPR developed in the projects of the ecosystem platform belong to the organizations themselves - the ecosystem as such owns no IPR. The ecosystem operates as a platform for several joint projects and r&d projects.

Key learnings and challenges

Key success factors of the ecosystem can be summarized as follows: 1) Support for the ecosystem orchestration, 2) Close cooperation of research institutes and companies, and 3) High level of trust. Recommendations for new co-creation initiative to be successful can be listed as: 1) Efficient and open-minded approach; 2) Well-functioning ecosystem rules and preconditions; 3) Trust-based co-operation between partners which treats equally all partners in the ecosystem.

The key challenges and learnings are 1) Technical operation environment of the ecosystem is challenging (harbours etc); 2) Exit of the key company/ies can interrupt the whole ecosystem; 3) Excellent leadership competence and capacity are needed to manage an ecosystem successfully.

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Sources:

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OECD (2019), University-Industry Collaboration: New Evidence and Policy Options, OECD Publishing, Paris.